INSIDE: WHAT HAPPENS WHEN CWD ARRIVES?

Montana Outdoors

MONTANA FISH, WILDLIFE & PARKS | $3.50

SEPTEMBER–OCTOBER 2017

PRIZE PACKAGE

How to find, hunt, and haul out your elk this season

IN THIS ISSUE:

FWP BROADENS ITS PERSPECTIVE

BACK, BRIEFLY, TO THE MOUNTAINS

OUR FANCY SMASHED VENISON BURGER

HAPPY 60th AND 30th ANNIVERSARIES, HUNTER AND BOWHUNTER ED

Montana Fish, Wildlife & Parks

FIRST PLACE MAGAZINE: 2005, 2006, 2008, 2011, 2017
SECOND PLACE MAGAZINE: 2007, 2009, 2012, 2015, 2016
Awarded by the Association for Conservation Information

FIRST PLACE MAGAZINE: 2012
Awarded by the National Association of Government Communicators

STATE OF MONTANA
Steve Bullock, Governor

MONTANA FISH, WILDLIFE & PARKS
Martha Williams, Director

MONTANA FISH AND WILDLIFE COMMISSION
Dan Vermillion, Chairman
Tim Aldrich
Logan Brower
Shane Colton
Richard Stuker

***MONTANA OUTDOORS* STAFF**
Tom Dickson, Editor
Luke Duran, Art Director
Angie Howell, Circulation Coordinator

***MONTANA OUTDOORS* MAGAZINE**
VOLUME 48, NUMBER 5
For address changes or other subscription information call
800-678-6668

Montana Outdoors (ISSN 0027-0016) is published bimonthly by Montana Fish, Wildlife & Parks. Subscription rates are $12 for one year, $20 for two years, and $27 for three years. (Please add $3 per year for Canadian subscriptions. All other foreign subscriptions, airmail only, are $48 for one year.) Individual copies and back issues cost $4.50 each (includes postage). Although *Montana Outdoors* is copyrighted, permission to reprint articles is available by writing our office or phoning us at (406) 495-3257. All correspondence should be addressed to: *Montana Outdoors*, Montana Fish, Wildlife & Parks, 930 West Custer Avenue, P.O. Box 200701, Helena, MT 59620-0701. Website: **fwp.mt.gov/mtoutdoors**. Email: **montanaoutdoors@mt.gov**.

©2017, Montana Fish, Wildlife & Parks. All rights reserved.

Postmaster: Send address changes to *Montana Outdoors*, Montana Fish, Wildlife & Parks, P.O. Box 200701, Helena, MT 59620-0701. Preferred periodicals postage paid at Helena, MT 59601, and additional mailing offices.

FSC MIX Paper FSC® C007549

Montana Outdoors

SEPTEMBER–OCTOBER 2017

FEATURES

10 Moving Meat Your deer or elk is down. Now what? *By Scott McMillion*

16 Saving Lives, Building Ethics For 60 years, Montana's volunteer Hunter Education Program instructors have been molding safe, responsible hunters. For 30 years, bowhunter instructors have done the same. *By Tom Kuglin. Photos by Thom Bridge*

22 38 For 38 Every hunting season for nearly four decades, this West Yellowstone hunter has taken a bull elk on public land. How does he do it? *By Craig Mathews*

26 Good To Be Back A quick trip to paradise in early September. *By Sam Jefferies*

28 Disease At The Door Montana will rely on hunters and landowners to help control CWD when (not if) it arrives. *By Laura Lundquist*

34 Where To Hunt Elk in Montana An insider's guide for new hunters and nonresidents to locating the best spots this season. *By Jack Ballard*

DEPARTMENTS

2 LETTERS

3 EATING THE OUTDOORS Fancy Smashed Venison Burgers

4 OUR POINT OF VIEW Getting Out

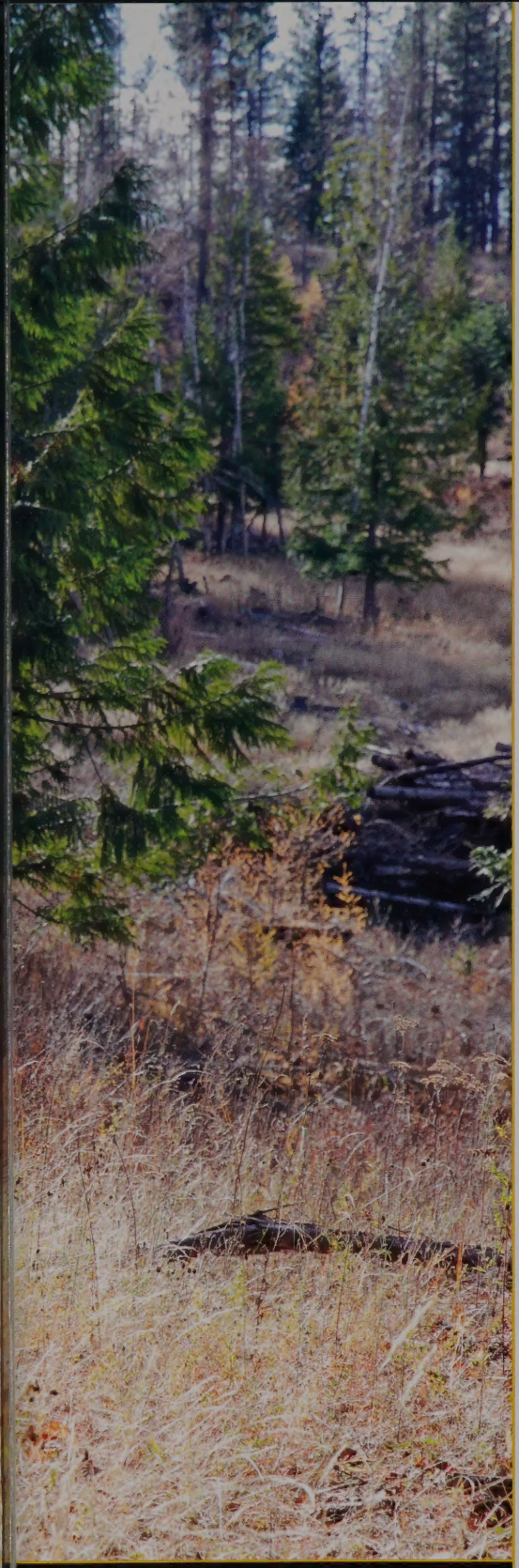
5 FWP AT WORK Earl Radonski, Fisheries Technician, Billings

6 SNAPSHOT

8 OUTDOORS REPORT

40 THE BACK PORCH When Everything Changes

41 OUTDOORS PORTRAIT American Mink



VENISON TO GO
Using an in-line two-wheel cart, a hunter easily transports his buck back to camp. See page 10 for more ways to move deer and elk. Photo by Donald M. Jones.

FRONT COVER
See page 22 to learn how one hunter has bagged big bulls each year for 38 consecutive seasons—all on public land. Photo by Jaime and Lisa Johnson.

Wild about WILD

We enjoyed your article on Montana WILD ("From Abstraction to Reality," July-August). Our family recently visited Montana WILD while touring Helena on our way back from a family reunion in Idaho. All of us, kids and adults, found something interesting and informative. We were most impressed with the exhibits on grizzlies, osprey nests, and wildlife science. The young ones also liked the gigantic wildlife statues outside the building.

Karen Owens
Billings

Memorable encounter

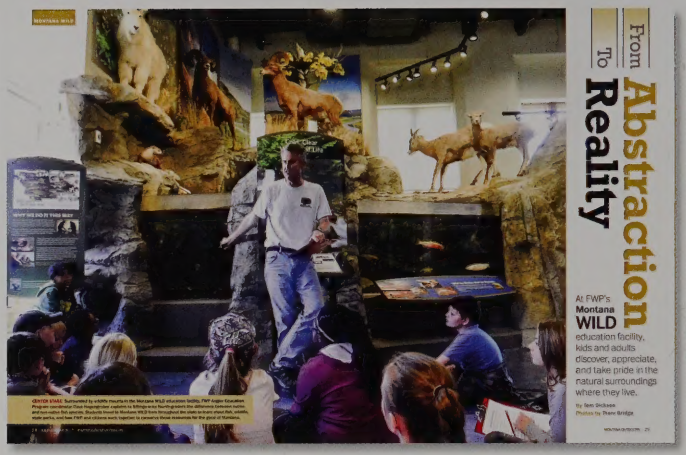
I just finished reading "Counting Ghosts" (July-August), your article on wolverine research. It reminded me of a beautiful and rare experience we had watching a mother wolverine and her two cubs for nearly an hour one afternoon about five years ago.

We were up very high in altitude in the Beaverhead Mountains, near Morrison Lake in far southwestern Montana, southwest of Clark Canyon Reservoir. We were leaving the area in our truck when we startled a brown, medium-size animal. She ran ahead of us for about 20 yards then veered off the dirt road. Upon reaching the crest of the hill, we again saw her, this time with her two cubs. The three ran down the hill, cubs following their mama. For the next hour we watched them playfully run up and down the hills below us. We were amazed how quickly they covered ground. At times we watched them through a spotting scope, unsure exactly what kind of animals we were seeing. The female seemed too large to be a badger, yet it was smaller than a bear cub. We suspected they were wolverines, but didn't know for sure until we got home and looked them up online.

Sadly, we have no record of our experience. Later, after talking to our son, we learned that we could have taken photos with our cellphone lens pressed up to the spotting scope. Fortunately, we will never forget that amazing experience and the beauty of those animals. We know we witnessed something few have ever seen. I truly hope you and your readers can someday see what we did.

Carol and Jim Rose
Lima

Editor replies: I'm sorry you weren't able to record your encounter. You and other readers might be interested in seeing a remarkable video of a Montana wolverine that had been trying to swim after a fawn but was driven off by the doe. Google "greatest wolverine video ever" and find it on the Cool Green Science website.


From Abstraction To Reality
At FWP's Montana WILD education facility, kids and adults discover, appreciate, and take pride in the natural surroundings where they live.

Buy licenses

In the May-June issue, you asked for ideas for funding nongame wildlife management in Montana (Letters, "What about nonresidents?") Here's one: Encourage everyone, resident and nonresident, to buy more licenses. Why not? That money goes to management and conservation that helps game and nongame species alike.

Since 1988 I have visited Montana many times to fish. Each trip I purchase a full-season nonresident fishing license, even though I fish only a few days. I believe that adding those extra dollars to FWP helps bolster your efforts to maintain Montana's excellent fisheries. In upstate New York, where I live, I not only buy a fishing and hunting license each year, but I also purchase a Federal Duck Stamp, even if I don't hunt waterfowl that year, as well as a $5 Habitat and Access Stamp. That money pays for outdoor education, environmental summer camps for kids, and upkeep of a state nature center. It benefits the outdoors for everyone. Montana should try something similar. Just as important, you need to advertise the stamp aggressively to all outdoor enthusiasts.

> "I believe that adding those extra dollars to FWP helps bolster your efforts to maintain Montana's excellent fisheries.

Howard Kligerman
Fayetteville, NY

Reservoir of no return

I found your article on Clark Canyon Reservoir ("Clearing Things Up," May-June) very interesting. The fishing has declined not only in the Beaverhead River below the dam, as the article describes, but also in the reservoir itself. For me, the fishing went downhill long before 2014. I used to buy an annual nonresident fishing license just to fish Clark Canyon. I quit fishing there regularly about five years ago. The last two years I caught only suckers, no trout. I tried Clark Canyon again last June on a three-day license and didn't get any action at all. As much as I used to enjoy fishing there over the years, I will not be back.

Bob Shillkett
Idaho Falls, ID

Clarification

Andy Sheldon, University of Montana zoology professor emeritus, recently informed us that the brook stickleback (Outdoors Portrait, May-June) is considered an invasive species west of the Continental Divide. "Sticklebacks showed up in the Swan and Clearwater (Blackfoot) drainages about 20 years ago, and I have no idea how far they've spread," he wrote.

Speak your mind

We welcome all your comments, questions, and letters to the editor. We edit letters to meet our needs for accuracy, style, and length. Write to us at Montana Outdoors, *P.O. Box 200701, Helena, MT 59620-0701. Or e-mail us at: tdickson@mt.gov.*

Fancy Smashed Venison Burgers

By Tom Dickson | Preparation time: 10 minutes | Cooking time: 3–5 minutes | Serves 4

DREW BENZ

Can a hamburger be fancy? Rachael Ray thinks so. The celebrity chef and TV personality has developed more than a dozen recipes to turn plain hamburgers into gourmet fare.

The recipe here is my take, using venison burger, on one of her more popular versions. It's definitely a burger, but unusual ingredients, like a toasted English muffin for a bun, turn it into something special enough for guests.

If it's still hot outside, grill these for a last taste of summer. If it's chilly, consider pan frying the ground meat to develop the delicious crust you only get using a skillet. I've added this "smashburger" technique after seeing it on the informative food website "Serious Eats" and trying it myself a few times. The crust is formed by pressing down on the burger with a spatula as soon as the meat hits a smoking hot pan, and holding it there for several seconds. This creates what's known as the Maillard ("May-yarl") reaction, or browning effect. Named for a French chemist, the Maillard reaction is a series of chemical processes that create the browned crust on meat and baked goods. Be sure to follow instructions exactly.

And don't forget a glove or oven mitt.

—Tom Dickson is editor of Montana Outdoors.

Note: A few readers wrote to tell us they loved the coffee venison steak rub featured in the July-August issue but didn't think the tomato paste was necessary. After further experimentation, I agree. Also, if you use the much hotter chipotle chile powder rather than the ancho chile powder in the recipe, decrease the amount from 2 T. to 1 t.

INGREDIENTS

12 slices crisp cooked bacon (optional)
1½ lbs. ground venison* or hamburger
2 t. Tabasco sauce
1 T. Worcestershire sauce
Kosher salt and pepper
Cooking spray or a drizzle of oil
Grated cheddar cheese (optional)
4 Thomas' English Muffins, split and toasted
3 T. butter
2 cloves garlic, chopped or grated
Pepper jelly (found in most grocery stores)

DIRECTIONS

In a bowl, add Tabasco and Worcestershire to the meat. Combine with your hands and form four 2-inch-thick patties about the size of a thick hockey puck. Season with salt and pepper.

Spray a stainless steel or cast-iron skillet with cooking spray or drizzle with oil and wipe with a paper towel. Heat on medium for 5 minutes. During this time, put a leather glove or oven mitt on your working hand to protect it from the heat. Increase heat until skillet is smoking.

Quickly add burgers to skillet and immediately press down hard on each one for 5–10 seconds with a stiff metal spatula until all are about 4 inches wide and ½ inch thick. Use a second spatula in your other hand if you can't create enough pressure. Cook without moving until a mahogany-brown crust develops, about 1½ minutes. Turn the spatula over and carefully scrape hard along the pan bottom to keep the browned crust intact while turning over each patty. If using, sprinkle cheese on patties.

Turn heat to medium. Cook—without smashing—until patties reach desired doneness: 1 minute for medium rare, 3 minutes for medium well. Remove burgers to a plate, cover loosely with foil, and let rest for 5 minutes.

In a small skillet or saucepan, melt butter over medium heat. Add garlic, swirl a minute, then brush the toasted muffins with the garlic butter.

Spread a heaping 1 t. of pepper jelly on each muffin top and another on each bottom. Place a burger patty and three bacon slices between the muffin halves. ■

* I think the best venison burger has 20 percent pork fat.

Getting out

The best way for me to understand the many issues involving Montana's fish, wildlife, and state parks is to get out and experience them firsthand. Since being appointed to this position by the governor, I've been crisscrossing Montana to visit all of FWP's seven regions. What I've seen is amazing.

For instance, a few weeks ago I was in Glasgow and toured Fort Peck Reservoir with biologists who've managed the fisheries there for years. I was blown away by the immensity of the reservoir—which has more shoreline miles than the entire California coast—and the stark grandeur of the surrounding breaks. I was also impressed to learn that Fort Peck is home to 47 native and introduced fish species. More notable was how much pride our crews took in managing the fish populations and the love they have for eastern Montana and its vast and scenic prairies, river breaks, and rangeland.

A bird's-eye view after a storm in northeastern Montana.

One inspiring employee I met on that trip was Tyler Haddix. For years, this FWP fisheries biologist and his colleagues have been working with the U.S. Army Corps of Engineers to modify flows from the dam to provide more natural conditions downstream. If they succeed—and I have every reason to believe they will—that partnership between FWP, the Corps, and others would revive more than 200 miles of the Missouri. That would benefit not only the federally endangered pallid sturgeon, but also the paddlefish, blue sucker, sicklefin chub, and other native fish species, not to mention reestablish the entire riverine ecosystem.

On another trip, I toured Lone Pine State Park, which sits on a mountain overlooking Kalispell and provides wonderful views of the Flathead Valley. That morning I marveled at the number of people walking the park's seven miles of trails before heading to work. FWP regional parks manager Dave Landstrom told me that Lone Pine, like Montana's other urban state parks, provides a place where people learn about history and nature, gather for family picnics, hike and bike trails, and explore the outdoors—within minutes of home.

At Lewis and Clark Caverns State Park, I sat in as assistant park manager Tom Forwood trained interpreters to teach visitors about this famous cave system and the bats and other wildlife that live there—wildlife that can be seen underground and via the park's extensive aboveground trail system.

As I travel across Montana, I visit legislators on their home turf, talk to FWP citizen's advisory committee members, and hear from Montanans concerned about how our work affects their lives and livelihoods. Just as important, I listen to the concerns and witness the work of our 700-plus employees.

For instance, at a function in Dillon honoring state senator Jeff Welborn, I met Dean Waltee, the local FWP wildlife biologist. Dean shared his thoughts with me on the importance of regularly providing local residents with information on game populations and hunting season recommendations. By giving hunters and landowners science-based information, such as his annual surveys of local elk management units, Dean builds public trust and exemplifies the FWP brand as a responsive, transparent agency attentive to public concerns.

The efforts by Dean—as well as Tyler, Dave, Tom, and other FWP employees—to work with the public and other agencies demonstrate how important it is for all of us who care about Montana's outdoors to pull together.

For Montanans, pulling together means recognizing what we have in common: a desire to connect with and experience the natural world. Maybe it's a rancher stopping to watch migrating sandhill cranes while fixing a gate, or a college student fishing the Gallatin River for the first time, or a family in Great Falls picnicking at the massive spring where Lewis and Clark camped 200-plus years ago. Whatever your outdoor passion, recognize that the outside is in us all. And then use that common bond to work together to help FWP and others protect the integrity of what makes Montana, Montana.

For FWP employees, pulling together means looking at the big picture of our agency, beyond regions, divisions, bureaus, or programs. It means less tunnel vision and more of what I call "peripheral vision"—a perspective recognizing the value of *all* employees: accounting and licensing teams, front desk staff, wardens enforcing game laws, biologists and technicians conserving fish and wildlife, and crews managing state parks.

I want that perspective to extend beyond the department itself, so that our employees recognize how their actions affect not only the resources, but also the citizens who created and support this department. We need to see that what we do shapes the quality of life of Montanans and the people who visit our state.

As the FWP director, one way I can help is to broaden my own knowledge of what we do, and to listen: to the employees who do that work, and to the Montanans whose lives we affect.

I'm off to Miles City tomorrow morning.

—**Martha Williams**, Director, Montana Fish, Wildlife & Parks

JOHN WARNER

Don't miss a single issue: **Subscribe today!**

YES! I'd like a year (six issues) of *Montana Outdoors* for just $12.

My/Donor Information: (Required for gift subscription)

Name

Address

City State Zip

Select: 1 Year *6/$12* 2 Years *12/$20* 3 Years *18/$27*

Send a Gift to: (Please print)

Name

Address

City State Zip

Select: 1 Year *6/$12* 2 Years *12/$20* 3 Years *18/$27*

Best Deal!

Payment enclosed Bill me later

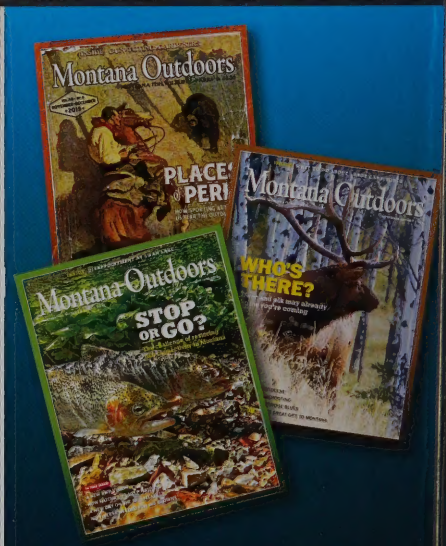
Add $3 per year for Canadian subscriptions.
All other foreign subscriptions are $48/year, paid in advance.

For faster service, subscribe by phone: **(800) 678-6668**
Or subscribe on-line: **fwp.mt.gov/mtoutdoors**

U17A

Place
Stamp
Here

MONTANA OUTDOORS
MONTANA FISH WILDLIFE & PARKS
930 W CUSTER AVE
PO BOX 200701
HELENA MT 59620-0701



Subscribe today and you'll receive the latest on Montana's:

- fish and wildlife management
- conservation issues and activities
- hunting, fishing, and wildlife watching

Plus the annual photo issue!

JOHN WARNER

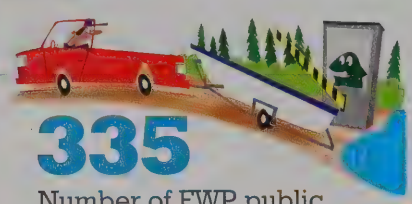
FISH FINDER

EARL RADONSKI Fisheries Technician, Billings

Every three years, we electrofish this four-mile stretch of the lower Bighorn River, known as the Manning Section, to assess fish species distribution. In the boat with me this October morning are Brad Olszewski (left) and Mike Ruggles. Montana Fish, Wildlife & Parks has data on this stretch going back about 30 years, and we've found that not much has changed, which is good news. But if we had seen, for instance, channel catfish numbers declining, then we would have investigated the cause of the decrease. That's just one of the many reasons FWP assesses these and other fish populations throughout Montana.

Doing this kind of work, being on the water, I feel like I'm living the dream. As a kid growing up in Wisconsin, I spent a lot of time goofing around in streams and I always loved being out in nature. So to move to Montana and work with fish and rivers as my job, I feel that I've come full circle in my life and am able to recapture some of my childhood joys, 40 years later.

Late one October morning, Helena photographer **JOHN LAMBING** was hiking the rim of the Marias River, about 15 miles upstream from where it joins the Missouri River at Loma, when he peered over and saw this scene below. "I happened to hit it when the cottonwoods were at peak colors," he says. "And then you add that deep blue of the water, which comes out clear from Tiber Reservoir upstream, along with those steep bluffs, and the combination is just spectacular." Lambing says the river downstream of Tiber carves a deep canyon that few people know about. "Up on top it's just flat wheat fields. You have no idea this canyon is there," he says. "I can't imagine a more beautiful river trip than doing a two- or three-day float from the dam to Loma, especially in the fall." ■



335

Number of FWP public fishing access sites across Montana.

Grizzlies are still in good hands

On July 31, the U.S. Fish & Wildlife Service removed the Greater Yellowstone Ecosystem grizzly bear population from its list of threatened species under the Endangered Species Act. That moved management authority from the federal government to state wildlife agencies in Montana, Wyoming, and Idaho.

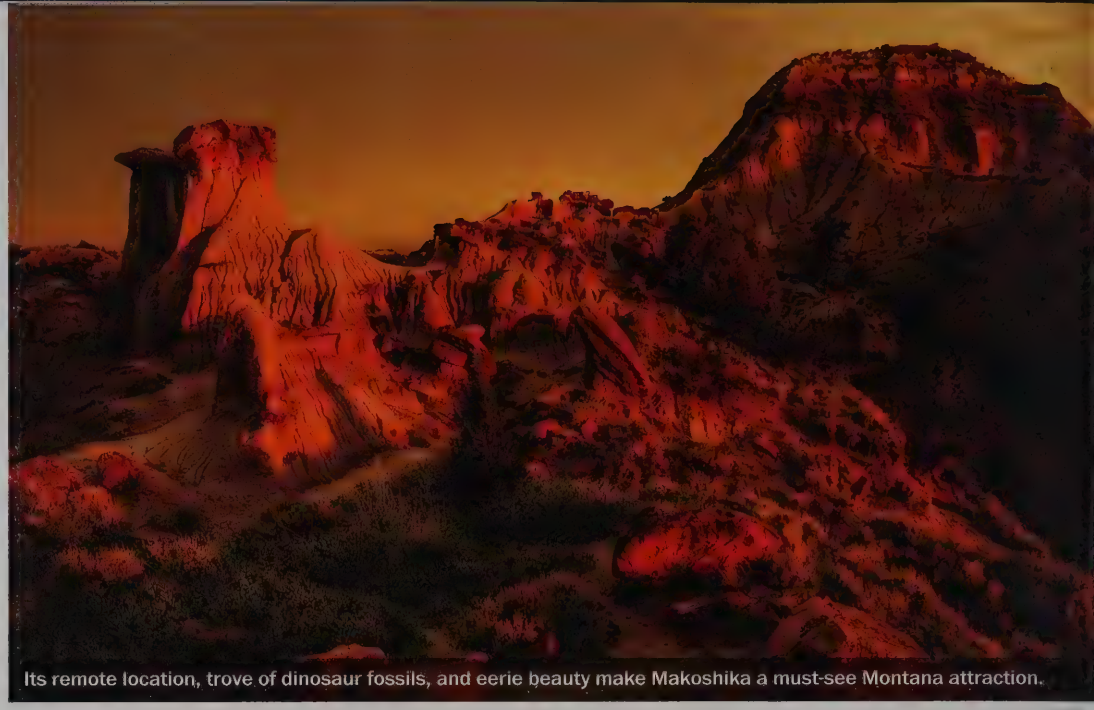
FWP officials say the change does not remove protections for the grizzly population. "Some people are now worried that state management will put the population at risk. It won't," says FWP director Martha Williams.

Williams notes that Montanans "respect and value" the grizzly bear,

Still protected

which is the state animal and the FWP logo. "We also have a strong track record of managing large carnivores in Montana, including wolves, mountain lions, and black bears. Grizzlies also will be sustainably managed."

According to Williams, protections remain in place to ensure a healthy grizzly population. "They will be classified as a protected game animal and protected from illegal or indiscriminate killing," she says. Though highly restricted hunting may take place at some time in the future, Williams says harvest would not endanger the population. "Many people are concerned about the grizzly's future. We are, too." ■



Its remote location, trove of dinosaur fossils, and eerie beauty make Makoshika a must-see Montana attraction.

STATE PARKS

Makoshika among USA Today's Top 10

Wondrously beautiful Makoshika State Park near Glendive is one of Montana's can't-miss attractions, according to *USA Today*'s 2017 Readers Choice Awards. The attractions were selected by a panel of Montana experts and the newspaper's editors. At more than 11,000 acres, Makoshika is Montana's largest state park, offering visitors solitude and serenity found in few other places. It also offers miles of hiking trails, opportunities to see dinosaur fossils, an otherworldly disc golf course, and a museum-quality visitors center.

The other Montana attractions in the *USA Today* Top-10 list: the World Museum of Mining in Butte, Beartooth Highway, C.M. Russell Museum in Great Falls, Glacier National Park, Big Sky Resort, city of Helena, the walkable Brewery District in Billings, Flathead Lake, and (though it's mostly in Wyoming) Yellowstone National Park. ■

BIRD CONSERVATION

Help migratory birds avoid window collisions

Many migratory birds have begun flying south, winging their way from nesting and breeding grounds in Canada to winter habitat in Central and South America and the Caribbean. It's a spectacular journey, but one that many birds will never finish. The obstacle: glass windows.

According to the American Bird Conservancy, hundreds of millions of birds die every year in the United States when they fly into windows. High-rise offices create an obvious threat, but half of the collisions occur at private homes. In the West, birds are especially prone to flying into large windows of homes built in forests and open areas.

Help is as close as your local hardware or art-supply store. Properly applied window screens, painted designs, and bird tape or decals all deter birds from flying into glass.

Google "ABC glass collisions" to watch a new video from the American Bird Conservancy that showcases creative—and attractive—ways to help birds stay safe on their biannual journeys. ■

Imprint of a dove on a glass window after impact

CLOCKWISE FROM TOP LEFT: CARTOON ILLUSTRATION BY MIKE MORAN; ERIK PETERSEN, INSTITUTE FOR APPLIED ECOLOGY; *MONTANA OUTDOORS*; USFWS; CAPTAIN TENNENAL/FLICKR; STEVEN GNAM

UPLAND BIRD CONSERVATION

Prison inmates grow sagebrush for sage-grouse

A new program at Montana State Prison in Deer Lodge is helping restore sagebrush habitat for sage-grouse while giving inmates an opportunity to cultivate new skills.

In late May, inmates sow sagebrush seeds into containers and then water, fertilize, and trim the plants daily during the summer until the sagebrush reaches 6 to 10 inches tall. In the fall, Bureau of Land Management (BLM) crews plant the sagebrush in sage-grouse management priority areas throughout Montana. Inmates build horticulture and team-building skills while contributing to an important conservation cause.

Inmates grew 15,000 plants in 2016, of which BLM crews planted roughly 11,000.

Once common in much of the West, the sage-grouse has declined substantially across its historic range. Western states have lost approximately half of their former sagebrush ecosystem in recent decades. In Montana, conversion of native sagebrush to grazing or cropland has accounted for much of the loss.

The Institute for Applied Ecology (IAE), a nonprofit in Corvallis, Oregon, is coordinating the Sagebrush in Prisons Project at 11 prisons in six states. In Montana, the project is a collaboration of the BLM, IAE, Montana Fish, Wildlife & Parks, Montana Department of Corrections, and the Sustainability in Prisons Project. The BLM provides most of the funding.

For more information on the Sagebrush in Prisons Project, e-mail Jessie Brothers, Ecological Education Program coordinator, Institute for Applied Ecology, at jessie@appliedeco.org. ■

Inmates at the Montana State Prison with trays of sagebrush that they water and trim daily so the seedlings are ready for planting in November.

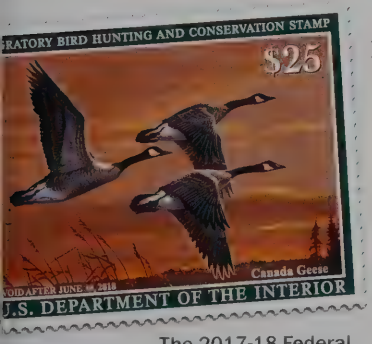
Where your duck stamp dollars go

Each year roughly 20,000 Montana waterfowl hunters pay $25 each to buy a Migratory Bird Hunting and Conservation Stamp (known as the Federal Duck Stamp) required to hunt waterfowl.

The U.S. Fish & Wildlife Service uses revenue from duck stamp sales to protect wetlands and grasslands for migration and nesting habitat across the United States. The USFWS spends roughly $800,000 of duck stamp dollars in Montana each year.

Birders and other conservationists also buy duck stamps as a way of contributing to habitat that helps waterfowl as well as shorebirds, raptors, and songbirds.

The stamps are sold at all post offices nationwide and most sporting goods stores. ■



The 2017-18 Federal Duck Stamp, by Jim Hautman

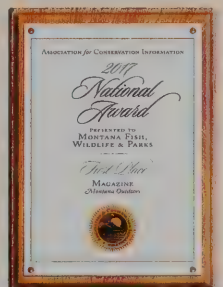
Montana Outdoors takes ACI "gold"

Montana Outdoors recently won first place in the magazine category in the Association for Conservation Information's 2017 awards competition, narrowly besting *Texas Parks & Wildlife* and *Wildlife in North Carolina*.

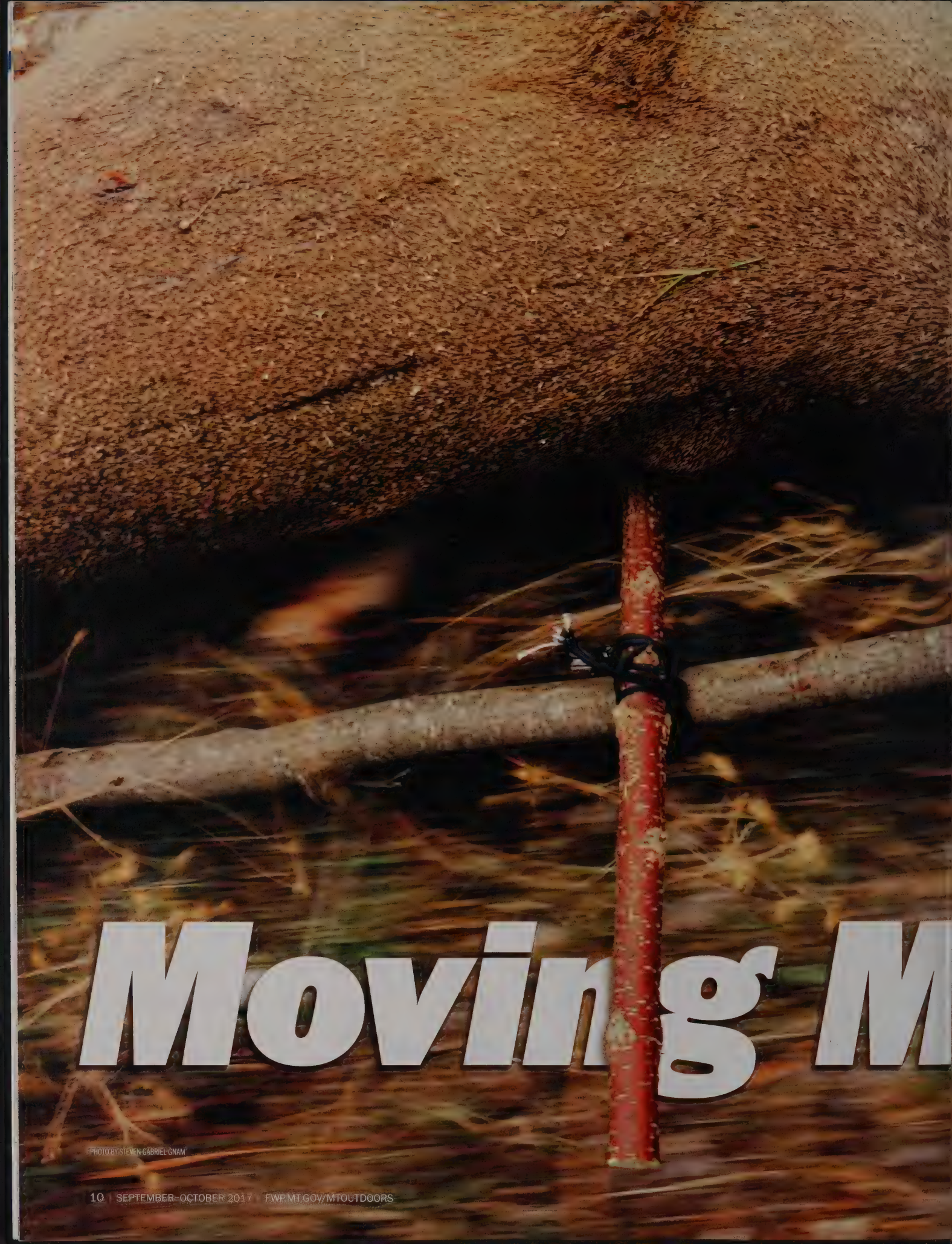
This is the fifth time in the past 12 years that Montana has been awarded top prize in the magazine category.

"A huge amount of credit goes to the employees of FWP, whose great and important work we cover in the magazine, and who are always so gracious and patient in explaining their jobs and the science behind it," says Tom Dickson, editor. "And there's no way we would continue to do so well without the Montana writers and photographers who contribute to the magazine."

In addition to the magazine award, *Montana Outdoors* won second place in the wildlife article category for "Overdue," about delisting grizzly bears in the Greater Yellowstone Ecosystem, and third place in the fisheries article category for "Open or Close," about the pros and cons of fish connectivity.



Organized in 1938, ACI is a nonprofit organization of communicators working for state, federal, and private conservation agencies and organizations. ■



Moving M

PHOTO BY STEVEN GABRIEL GNAM

eat

Your deer or elk is down. Now what?

By Scott McMillion

Elk have an infuriating habit of hiding out in inconvenient places: distant ridgetops, black timber, inaccessible holes full of deadfall. So after you've accomplished the impeccable sneak and squeezed off the perfect shot, you're faced with moving a mountain of meat across inhospitable terrain back to the truck, which now seems impossibly far away.

Horses or mules are the time-honored option, but their proper care and training demand land, money, and time unavailable to many of us. Plus, because they're tough to bring along while hunting, horses require a trip back to camp or the trailhead to retrieve them for packing out the elk.

Thousands of people have quartered elk and made repeated trips to haul meat to their vehicle. Boning out the meat can reduce the total number of loads. But it's still backbreaking and time-consuming to schlep 60- to 85-pound loads for miles, several times—even on trails, much less through a forest littered with downed trees.

Thomas Baumeister says he's found an alternative: llamas. Get the right ones and you've got a string of agreeable animals that eat almost anything, navigate the toughest terrain, and don't need much water. He calls them his "string of pearls." "And they get along with everyone, including each other," says Baumeister, an avid hunter who is chief of the Montana Fish, Wildlife & Parks Conservation Education Bureau.

Baumeister keeps five llamas at his home near Helena. "They trim my lawn and the neighbor's lawn," he says. Cost? Baumeister only spends about $350 a year on hay. A bonus: Llama pellets make valuable fertilizer, and since they poop in the same place every day, it's easy to scoop up. "We grow our tomatoes in it," Baumeister says.

When hunting season rolls around, they help him hunt elk and then haul the meat back to his vehicle.

Hunting with llamas is simple, Baumeister says—or at least a lot easier than using skittish horses or stubborn mules. Llamas are easy to load in a trailer, then hang around camp and don't need to be hobbled. Distant elk don't seem spooked by them, and if you keep the llamas between you and the elk, they can provide a few valuable moments of portable cover. Like faithful dogs, pack llamas stick close to their handler, whether on steep talus slopes or in thick lodgepole, and they go on alert when predators or other wildlife are nearby. Baumeister calls his lead animal his "periscope" because its head is usually within a few inches of his own, providing an extra set of eyes for spotting game.

Then, when the shooting is done, the pack animals are already there with you, each ready to carry 60 to 70 pounds of meat.

Baumeister bones out his downed elk, cools the meat, and puts it in plastic buckets that fit inside the llamas' panniers, measuring the weight with a luggage scale to make sure the load is balanced. The process takes about an hour. "It's surgical," he says. "It's quick, it's clean, and you're in and out."

Gunshots don't spook his llamas, and their unique feet—a sort of cross between a goat's hooves and a dog's paws—make them incredibly agile.

There are drawbacks. You can't ride a llama, they can be expensive to purchase, and finding the right animals isn't always easy.

If you're in the llama market, Baumeister advises looking for breeds made for packing, not guarding livestock. Also, you'll need more than one. Solitary llamas, he says, can actually die of loneliness.

At a cost of $800 to $1,200 apiece, putting together a string of pack llamas can take a chunk out of the budget.

But, as Baumeister says, they'll let you go farther, hunt later in the day, and bring more comforts to camp. His string of five animals once hauled all the gear for three hunters into the backcountry. Then the llamas packed out the meat from two cow elk. The hunters had to carry most of their camping gear on the way out. But at least it was downhill and the gear weighed a lot less than the meat.

PACK GOATS

Another option for moving elk out of the backcountry is goats. Though little known in this country, goats have been hauling gear in Asia for centuries. A 200-pound goat can carry 30 to 50 pounds and, like llamas, they'll eat about anything and can go two or three days without water. A half-dozen can easily transport a disassembled elk carcass.

Pack goats are drawing enthusiasts in parts of the West. High Uinta Pack Goats, an Evanston, Wyoming, company, is one of them. "They can travel over a wide variety of terrain, including packed snow, downed logs, and rock," says owner Clay Zimmerman. "Short of climbing a cliff, if you can get there, so can your goats. Probably with a silly face watching you catch up."

If properly trained from infancy, they also bond well with people and offer about a

Scott McMillion is editor in chief of Montana Quarterly.

CLOCKWISE FROM UPPER LEFT: WILDERNESS RIDGE TRAIL LLAMAS; NANCY CLOUGH; CURT WELLS/*BOWHUNTER*; NANCY CLOUGH

HUNTING BUDDIES Top left and right: Llamas can carry 60 to 70 pounds of meat each. The docile animals need little water and can eat most anything. Bottom left and right: Packing with goats. Clay Zimmerman, owner of High Uinta Pack Goats in Wyoming, says goats provide an almost unfair advantage for hunters. "They mask scent and, when you hunt with them, elk and deer don't really recognize you as a human," he says.

GUTLESS FIELD DRESSING

After shooting an elk, most hunters still field-dress the carcass—cutting open the body cavity and removing entrails to lessen weight and cool the meat. But a growing number are doing "gutless" field dressing—removing the animal's skin and then cutting the meat off the bones in large chunks in the field. This method takes slightly longer than gutting and quartering an elk, but produces lighter loads. The meat, freed from heat-trapping bones, cools far more quickly. An added bonus: Because you don't need to open the smelly body cavity, gutless field dressing greatly reduces grizzly-attracting scent at the kill site. Dozens of instructional videos are on YouTube under the heading "gutless field dressing."

decade of productive work. But Zimmerman cautions that you need to spend at least a few minutes every day with your goats and prepare to spend some money. A fully trained pack goat costs up to $600, and you need at least two, since they are herd animals. Keeping the goat will cost between $30 and $60 monthly.

Great Falls hunter Aaron Turner told the *Great Falls Tribune* last year that his goats, which weigh about 200 pounds, can each carry 60 or 70 pounds for a few miles. He uses wethers (castrated males), but some people use does (females) so they can have fresh milk in the backcountry.

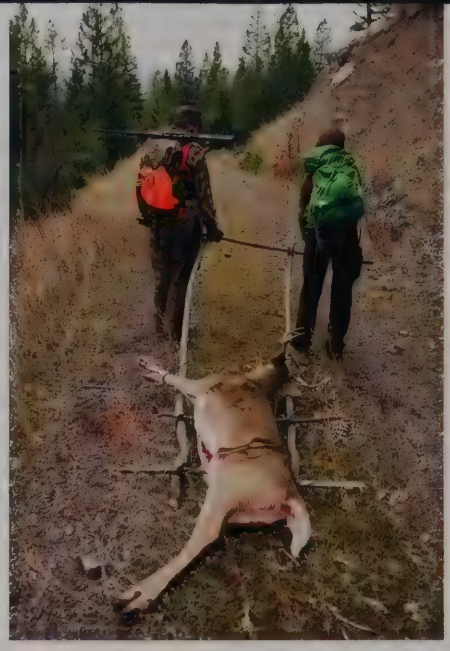
Goats don't require much space, but you will need stout, tall fencing to keep your animals at home. Goats are prodigious climbers and good jumpers.

Plus, they're friendly. You can even use one for a pillow once you get to camp.

OTHER OPTIONS

Game carts have been around for decades and are popular, particularly with elk hunters who cover a lot of open country. But their value erodes quickly if you're moving meat across a sidehill or up a steep slope. And if you need to traverse downed timber, forget about it.

One innovation is called the Honey Badger Wheel. Designed by a Utah bicycle manufacturer, it resembles a freight-hauling unicycle that you steer from behind with hand grips, like a rototiller. Prices start at $500 and go up from there. Accessories let you haul children, adults with disabilities, or a brace of loaded coolers to a beach party. Designers say the Honey Badger Wheel can haul 250 pounds. Another is Neet Kart, which has two in-line wheels and handles in the front and back for one- or two-person use.



HANDMADE HAULER Not all transport devices need to be fancy or even store bought. You can fashion a sled out of tree branches and rope.

Note that all wheeled vehicles, even game carts, are banned in wilderness areas.

Plastic toboggans or snow disks are lightweight and inexpensive devices that can haul a lot of meat, especially when there's snow on the ground. (Don't forget to bring lightweight rope or straps to keep your load in the sled.) But carrying a plastic sled while hunting can be noisy or awkward in brush or high winds. Several companies make roll-up sleds—basically a thick sheet of flexible plastic—you can put into or strap onto your hunting pack.

> ***"I tell people there's always a bit of work involved."***

Packing out bone-in or deboned quarters is a time-honored but grueling method. Fortunately, you can lessen the strain on your body. First, get the right gear, says Bozeman hunter Randy Newberg. Newberg has grunted a lot of meat out of the backcountry, much of that documented in his popular television shows, podcasts, and YouTube videos that focus on public lands hunting. Invest in some trekking poles, he says. "They're just like having four-wheel drive," and you'll avoid wear and tear on your knees and ankles.

A good pack is important, too. Newberg advises buying one with a built-in load shelf, a waist belt that transfers weight to your hips, and lots of straps to secure the load close to your body and keep it from wobbling as you traverse tough terrain. "One that's sized and adjusted to your body makes a world of difference," he says.

Don't be afraid of walking extra miles. It's easier to put in more trips with lighter loads, Newberg says, and a straight line isn't always the best route to the truck. If making it to a trail adds a half mile to your trek, it's worth the extra steps just to avoid clambering through deadfall or sidehilling. Your body will thank you later.

Whatever your preferred method, moving meat out of the backcountry requires effort. Pack animals are a year-round commitment. Carts don't work everywhere. And the human back has its limits. Particularly with elk hunting, "I tell people there's always a bit of work involved," Newberg says.

Fortunately, hunters across the West continue to find new ways to lessen the load.

CLOCKWISE FROM UPPER LEFT: STEVEN GABRIEL; GNAM; LISA DENSMORE BALLARD; DONALD M. JONES; BRANDON KIESLING; RICK CLARK; MARC PIERCE / IMAGES ON THE WILDSIDE

THOSE LAST TWO FEET

Last year's elk hunt left me with a dilemma. Hunting alone, I dropped a mature cow elk on private land, gutted it, then hustled to my pickup, a mile or so away. I backed right up to the carcass, got out, and had to scratch my head for a while. The elk was on the ground. The tailgate was about two feet high. Those two feet might as well have been 200 feet.

The ground was flat, so I couldn't drag the animal to a rise and roll it into the pickup. There was no wood around to make a ramp. My buddy Vince can crouch on the ground and do a pretty good impersonation of a hydraulic jack with an elk on his back. But he was fishing in Alaska.

The temperature was above 60 degrees F., there wasn't a shred of

MEAT MOVERS Top left: Wheeled game carts are popular for hauling animals back to the vehicle. They are especially handy for flat terrain. Top right: In-line carts are more expensive but allow hunters to traverse small downed timber and some sidehills. Above left. Plastic kids' sleds and saucers work especially well in snow. Some versions can be rolled up and tied to a pack. Above right: Hauling meat on your back is easier with a quality pack.

shade, and flies were on the way. I had to get that animal off the ground. So I started skinning and carving. I set up a stout tote box to use as a step, enabling two short lifts instead of one long one, and was able to hoist the animal into the truck in several big chunks. The front quarters were easy, the torso and neck were hard, and the hindquarters were a real grunt.

The job took more than an hour and it made a mess of me. By the time I finished, I was sore, thirsty, and covered in blood.

There's got to be a better way, I told myself. And this has to be a common problem, especially with Montana's new shoulder seasons directing more elk hunters to private land, where they're more likely to be able to drive to a carcass, only to face the problem of the last two feet.

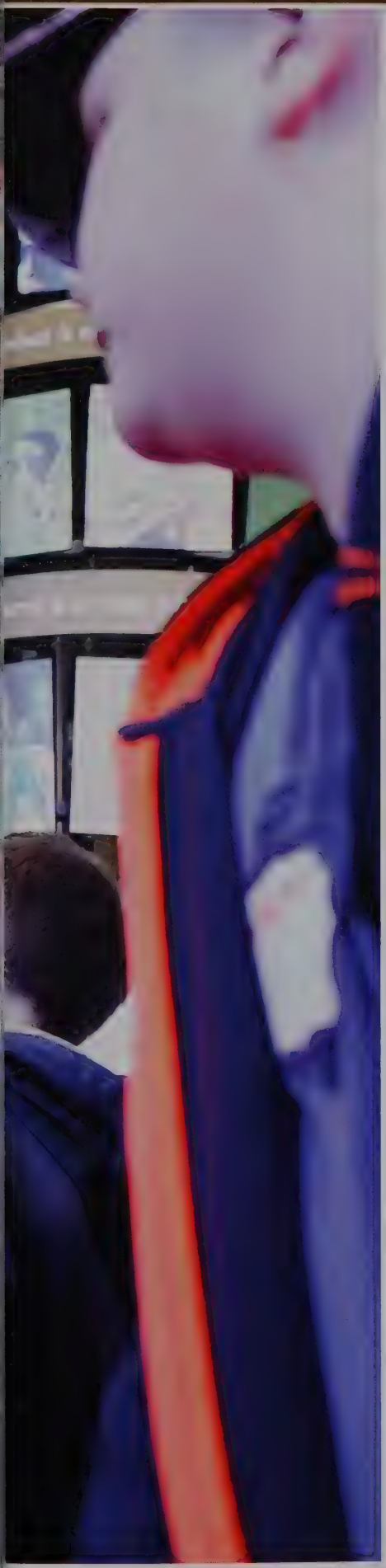
So I took the approach common to perplexed folks in the modern era: I logged onto YouTube, seeking instruction and advice.

Here's what I learned: First, bring a ramp. It doesn't have to be fancy. Some old planks and plywood will work fine. But even with a ramp you can't shove a mature elk into the truck by yourself. So also bring a winch. An electric one mounted on a roll bar works really slick, but it's not an option if your truck, like mine, has a topper. The best idea I found uses a hand-cranked boat winch anchored to the pickup bed's inner side rails, in the corners up by the cab.

A pulley system can ease the chore as well, if you have stout ropes and the pulley has a locking mechanism. That way, you can shove or tug the animal up the ramp inch by inch, and the locking pulley will hold it there while you catch your breath, waiting for the strength to shove some more.

SAVING LIVES, BUILDING ETHICS

For 60 years, Montana's volunteer Hunter Education Program instructors have been molding safe, responsible hunters. For 30 years, bowhunter instructors have done the same. By Tom Kuglin. Photos by Thom Bridge.



David Lemmon stands at the bottom of a hill during a recent Hunter Education class in Helena. Above the volunteer instructor is a cow elk decoy silhouetted against the sky. A line of students clutching unloaded shotguns and rifles approaches.

"Would you take this shot?" Lemmon asks.

A resounding "No!" comes from the students.

When he asks why not, a mix of, "Because it's skylined" and "If you miss, the bullet will keep going," draws Lemmon's affirmative nods.

Many things can change over six decades, but the core safety values taught to Montana's next crop of hunters today remain the same as in 1957. That was the year the Montana Legislature, alarmed by reports of increasing hunting accidents in eastern states, instituted mandatory hunter safety education. The goal: require young hunters to learn how to safely handle firearms. Over the next 60 years, completion of Montana's "Hunter Ed" course became an early rite of passage for many boys and girls, joining later milestones like earning a driver's license and graduating from high school. Shaking the instructor's hand and receiving that Hunter Ed card means no longer just tagging along on a hunting trip but becoming part of Montana's hunting future.

Instruction is built on the foundation of safety and ethics. While technology evolves and laws change, the program's four key messages remain unchanged: Always point the muzzle in a safe direction; always treat every gun as if it were loaded; always be sure of your target and beyond; and always keep your finger off the trigger until you are ready to fire. "When you have a teaching method that works this well, you don't want to mess around with it too much," says Wayde Cooperider, Outdoor Skills and Safety Program supervisor for Montana Fish, Wildlife & Parks.

Tragic origins

Montana's first Hunter Ed instructor, Pat McVay of Kalispell, recalls a grim 1956 hunting season in northwestern Montana when

"SHELLS GO IN HERE" Craig Putchat, left, manager of Spring Meadow State Park and a volunteer Hunter Ed instructor, shows students the mechanism of a shotgun. Gun safety has been the Hunter Ed Program's top priority since the Montana Legislature created it in 1957. Above: Students decide whether it's okay to shoot at an elk silhouetted against the skyline.

LEARNING THE RIGHT WAY Left: Students practice safely carrying and handing off practice firearms. Right: FWP Hunter and Bowhunter Education Program assistant Sara Smith explains to students why it's important to always treat every gun as if it were loaded.

four people were injured in hunting accidents. "I very much believed they could've been prevented," he says.

At the time, McVay was teaching shooting skills to Flathead Valley youth through the National Rifle Association's (NRA) Junior Rifle Program. Realizing the importance of training young shooters to handle firearms safely, he and others called and met with legislators to request making safety instruction a requirement for all hunters under age 18. In January 1957, McVay got a phone call from Mel Ruder, editor of *Hungry Horse News* and a hunter-safety advocate. "Mel told me the legislature had passed mandatory Hunter Ed, and three days later I got to file my paperwork to become an instructor," he says.

More volunteer instructors followed. Many were World War II and Korean War veterans. In civilian life they maintained an interest in firearms and enjoyed sharing their knowledge with youngsters eager to learn. Others were avid hunters hoping to pass on Montana's heritage. Some instructors were game wardens or biologists with what was then the Montana Fish and Game Department. And some simply loved to teach and recognized the importance of promoting safety.

Whatever the instructors' backgrounds, they brought a passion that McVay continues to exemplify. Now in his 90s, the Montana Outdoor Hall of Fame inductee still enjoys hosting Hunter Ed classes at his property near Kalispell. "I wouldn't trade it for anything in the world," he says.

Tom Kuglin is the natural resources reporter for the Independent Record. *Thom Bridge is a photojournalist for the Helena-based newspaper.*

Evolution of a program

The Hunter Ed Program has undergone a number of changes over the past six decades. At first, it was run by FWP's Enforcement Division. Then, in the early 1990s, it became part of the Communication and Education Division. Students continued to learn about different types of firearms and actions and how to safely shoot, cross fences, and remove a firearm from a vehicle. But instruction also now included survival techniques, bear awareness, landowner relations, first aid, and outdoor skills.

More changes came during the 1990s and 2000s. The Montana Legislature made

Too Young to Hunt?

Hunting groups were divided during the 2015 Montana Legislature over a bill that has reshaped youth hunting in the state. Brought by Senator Mark Blasdel, Kalispell, the legislation created the Apprentice Hunter Program. Rules would allow apprentices as young as 10 to hunt with a designated mentor for a handful of game species.

At the time, young people could not legally hunt in Montana unless they were at least 12 years old and had taken Hunter Ed.

Supporters said the bill offered younger hunters a great way to get into the outdoors under direct supervision of a parent, relative, or other mentor.

Opponents, including many Hunter Ed instructors, argued that kids age 10 and 11 are too young to grasp the concepts of safety and responsibility, and too small to safely handle heavy firearms. Another source of heartburn: The bill did not require apprentices to complete Hunter Ed.

In the end, the legislature passed the bill,

FIELD EDUCATION Left: Hunter Ed students practice marksmanship and shooting positions at an air rifle range. Right: Volunteer instructor Dwain Hoover teaches the art of following a blood trail.

"You need to recognize that you're out there with a piece of paper that allows you to take an animal's life, and that's a very serious thing."

Hunter Ed mandatory for all new hunters born after January 1, 1985, and added a separate Bowhunter Education course for archers. Responding to requests from older hunters with busy schedules, in 2009 FWP began offering an online course. Though the course included a mandatory in-person field day for those over age 18, some instructors balked at the change. "There was and still is a tremendous amount of pushback from instructors who maintain there's no replacing in-person training for something as important as firearms safety," Cooperider says. "We definitely understand their concerns, but online education has been very successful, and we still provide plenty of hands-on instruction with the field day."

Online education allows FWP to set up a wider range of options, from traditional weeknight classes to compressed weekend courses. "Public demand for more class offerings, times, and formats has forced us to change and adapt our program," says Vivica Crowser, FWP Regional Information and Education Program manager in Missoula. "Montana hunter numbers remain steady, but they are dropping in many other states. The last thing we want to do is turn away potential hunters by not offering convenient safety education."

The main focus of Hunter Ed is safety, but instructors also stress ethics. Students receive copies of *Beyond Fair Chase* by retired FWP biologist and communicator Jim Posewitz and discuss the scenarios and choices they must make in the field. As Posewitz writes in his book, "Fundamental to ethical hunting is the idea of fair chase. This concept addresses the balance between the hunter and the hunted. It is a balance that allows hunters to occasionally succeed while animals generally avoid being taken."

Cooperider says respect and responsibility are key to the Hunter Ed ethics instruction.

and Governor Steve Bullock signed it.

Recognizing that the new apprentice program could mean big changes, FWP and the volunteer instructors wanted to give 10- and 11-year-old apprentices the chance to take Hunter Ed if they and their parents chose. "We're trying to view the apprentice program not as a barrier, but as a year or two head start," says Vivaca Crowser, FWP Regional Information and Education Program manager in Missoula.

In 2015, Montana held its first apprentice season. The program has proved popular, attracting nearly 6,800 apprentices in the past two years. Though most apprentices (80 percent) have forgone Hunter Ed for now, the rest have enrolled in the course while also apprenticing. "I have not heard complaints from our instructors about the 10- and 11-year-olds who have enrolled," says FWP Outdoor Skills and Safety Program supervisor Wayde Cooperider. "The same goes for FWP game wardens. They are reporting positive interactions in the field with the apprentice hunters they run into."

Whether apprentices with their two years complete will enroll in Hunter Ed and continue hunting is the big question as the 2017 hunting season approaches. "We won't know until the end of the season, but we're hopeful that the apprentice program will in fact increase hunter participation, which really is the whole point of the apprentice hunter concept," Cooperider says.

For more information on the FWP Hunter Apprentice Program, visit the department's website at fwp.mt.gov.

BONING UP FWP regional supervisor and Hunter Ed instructor Gary Bertelloti explains the difference between mule deer and white-tailed deer antlers.

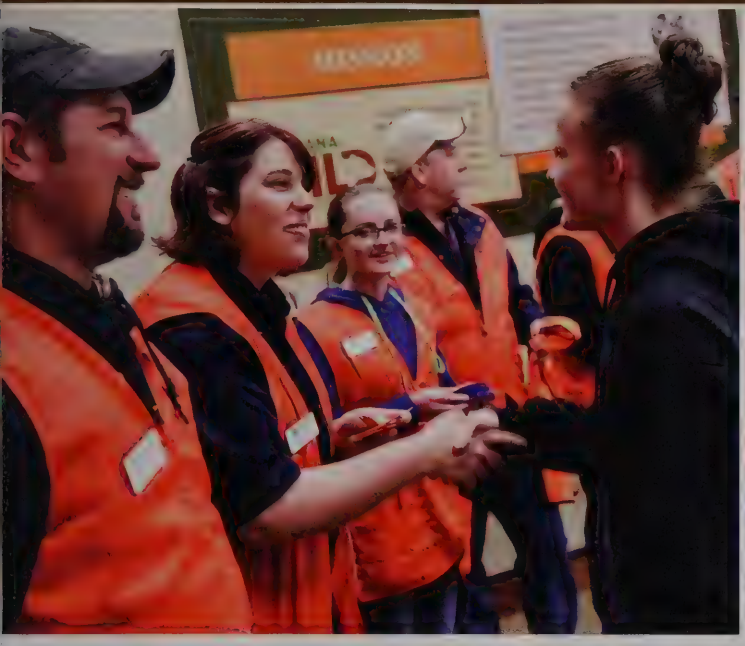
"I tell students that respect means respect for each other, respect for nonhunters, respect for the land, and, biggest of all, respect for that animal. You need to recognize that you're out there with a piece of paper that allows you to take an animal's life, and that's a very serious thing."

Because the stakes are so high, passing Hunter Ed is far from guaranteed. Instructors fail students who can't demonstrate safe firearm handling. "What I tell our instructors is to ask themselves, 'Would you hunt with that student?'" Cooperider says. "If the answer is 'No,' then the student is invited to participate in a future class."

Instructor involvement

Among those taking the class in Helena today are instructor David Lemmon's children Walter, 12, and Isabelle, 11. Last year both kids hunted as apprentices (see sidebar, page 18), and each harvested a deer. Walter is looking forward to hunting elk for the first time this year. Though Isabelle is less than excited about watching the field-dressing video, she enjoys the experience of being outside and appreciates the benefits of hunting. "I like to see wildlife, and I like to hike," she says.

Lemmon loves to hunt and hopes to



COMMENCEMENT Above and right: Instructors congratulate graduates and hand out jacket patches and Hunter Ed cards that certify course completion.

instill in his kids values like helping to manage wildlife populations and putting meat on the table. "I want my kids and my kids' kids to be able to see wildlife, so it's important to do our part," he says.

Helping out at another station is 14-year-old junior instructor Emma Hoover. She joins her father and brothers in taking participants through a series of hunting safety exercises. During class, Hoover eyes the muzzles of the students' rifles to make sure they are always pointed away from people. "I like having the chance to tell them how to be safe," she says.

The field course is only half of graduation day for these students. Inside the classroom, instructors go over the written test. One question asks whether to fire at a deer in a particular scenario. The answers are split. Instructor Gary Bertelloti, an FWP regional supervisor, says indecision should always set off a warning light in a hunter's head. "If you're not sure whether to shoot, then the correct answer is always, 'Don't shoot,'" he tells the class.

30 years, 60 years, and beyond

Montana's Hunter and Bowhunter Ed instructors have always displayed rare dedication. "In my mind, it's more about our volunteers than it is the programs, because without them we wouldn't have the programs," Cooperider replies when asked about the programs' respective 60th and 30th anniversaries.

> "These anniversaries are testament to the instructors' personal and collective dedication to our hunting heritage."

Hunter education instructors in the early 1960s

"These anniversaries are testament to the instructors' personal and collective dedication to teaching the safety, responsibility, and ethics of our hunting heritage."

Montana's 1,300 instructors teach 7,500 Hunter Ed and 3,000 Bowhunter Ed students each year. Many instructors have 20, 30, and 40 years of service. A handful have been teaching for half a century or more.

Becoming an instructor requires certification and taking time away from family, all in the interest of shaping future hunters. "Every year, we seem to ask more and more of our instructors, but with so much experience among them it always seems to run smoothly," Crowser says.

Cooperider is confident about the programs' future. Enrollment remains steady, with female students becoming an ever-increasing part of the program. Once comprising only a small percentage, in 2015 girls and women accounted for nearly 41 percent of Hunter Ed participants and more than a quarter of Bowhunter Ed students. "Nationally there's a big concern about hunter numbers dropping off, but in Montana we're staying pretty steady. I don't see that changing," Cooperider says. "We've got a great state to recreate in, and our education programs are solid."

To learn more about FWP Hunter and Bowhunter Education Programs, visit the department's website at fwp.mt.gov.

38 FOR 38

Every hunting season for nearly four decades, this West Yellowstone hunter has taken a bull elk on public land.

How does he do it?

By Craig Mathews

NOVEMBER 8, 2016

At 6 a.m., my friend Tim Bozorth and I leave our trucks to begin hunting. It's a relatively warm morning for early November, already 32 degrees F. when we split up and begin ascending the mountain. Tim heads south while I climb east, both of us working up into the Taylor-Hilgard Unit of the Lee Metcalf Wilderness Area in the Madison Range, about 30 miles north of West Yellowstone. I've scouted this route four times this season and expect to see elk this morning, as has been the case on two previous visits.

I hike straight uphill, climbing quickly into the black timber, where elk go at daylight. I have taken bulls here before, on the north side of the mountain, after they'd grazed on a south-facing slope during the night.

At 8 a.m. I move slowly into the area where, each morning after feeding, the elk spend the day loafing in the security of thick forest. As I move upwind, the soft breeze fills my nostrils with the smell of elk. I know they are close. I freeze, look into the dense timber, then inch my way forward. I stop every few yards to scan, looking for a moving antler, a patch of brown hide, or a white butt. Fifty yards uphill I pause and peer into the forest. I see an antler move, and I freeze again. There, 75 yards away, is a bedded bull.

A minute later I take my 38th bull in as many hunting seasons, all on public land. I sit next to the downed 6x6 bull for a few moments, quietly thanking the Lee Metcalf Wilderness Area, the mountain I hunted, and the elk itself. I think back over the many bulls I've been lucky enough to harvest during Montana's rifle season and what I learned about elk, elk hunting, and myself.

WHERE TO GO

I am one of the luckiest guys in the world because I live and work in elk country.

My wife, Jackie, and I moved to Montana in 1979. I was police chief in West Yellowstone for a few years before starting a fly-fishing business. I've hunted on public land in southern Madison and Gallatin Counties every fall since we moved here.

It's no secret that all of the hunting districts in this part of southwestern Montana harbor elk. The trick is to learn where in those areas to find bulls during the five-week season.

What I do is look on topo maps for level, grassy areas high in the mountains next to steep areas. These "parks" are where elk feed at dawn and dusk. Then I look for nearby north-facing "black timber"—the thick, cool, secure forest where they hang out for the rest of the day. After I locate these areas, I hunt them to confirm that elk are indeed there. Then I keep going back.

I've learned never to hopscotch from one drainage to another from day to day. When you don't see elk, it's tempting to move to a completely new area. Don't. Elk might be in one canyon one day and a different canyon the next, but they will soon return. If I hunt an area that has forage and security, I am confident I will run into elk within a few days.

I know many hunters who drive around or sit in their trucks glassing the flats along the roads and highways for "ranch elk." These cows and bulls have been pushed down off the mountains by human hunters or predators onto mostly private land. If you can obtain permission, and enjoy hunting this way, it's certainly an option. But it's not my preference. The key to my success has always been getting up into the mountains.

WHEN TO HUNT

I consider elk hunting a privilege, so I go whenever I get the chance. Every day spent afield in elk country, especially during hunting season, is a day I learn about elk behavior and movement. One season I killed a bull on opening day and then spent the next 34 days in the woods, either hunting deer or accompanying a buddy who was hunting elk.

Though I don't bowhunt, I chase ruffed and dusky (blue) grouse in the mountains with my bird dogs in September and October. Bull elk often bugle at the sound of the locator bells on my dogs' collars, providing me with information I might use a few weeks later when the rifle season opens.

Many elk hunting friends spend the

UNBROKEN STREAK The author with four of his 38 bulls. Clockwise from above: 2008, 2013, 2016, and 2015. Note the surrounding heavy timber, where he has his best success sneaking up on bedded elk during midday.

season waiting for snow to bring elk down to the valley floor. That approach can work, but it requires snow—something that's been in increasingly short supply lately due to climate change. Many hunters spent the entire 2016 elk season waiting for snow that never came. While they were waiting, I was out hunting. As is often the case, I shot a bull last year with no snow on the ground.

As for time of day, I've taken most of my elk at midday, sneaking slowly through known bedding and security areas. I've taken more than half my bulls between noon and 3 p.m. Having learned over the years where bulls loaf and hide, I can slowly move through the timber with a good chance of spotting an elk before it sees me.

I've shot 14 bulls at first light, the next most successful time for me. Sometimes elk are still feeding during that first hour of legal shooting. But usually by then they've finished and are safe within their daytime security areas of black timber, where they loaf and chew their cud.

Dawn, midday, dusk—hunters take bulls every hour of the day. But only if they are out hunting. If there's one certainty about elk hunting, it's that you never kill a bull indoors. I remember a particularly nasty morning in 1996 when I woke to hunt at 4 a.m. It was 12 degrees F. and blowing snow. I wanted to stay in bed, especially because I had an appointment at 10 a.m., giving me only a few hours to hunt. I went anyway and ended up shooting a near-perfect 6-pointer. I even made it to my meeting on time and returned later that day to haul the meat off the mountain.

Sleep? There's plenty of time for that during the other 47 weeks of the year.

HOW TO HUNT

It's critical when hunting to have a plan. Just wandering around aimlessly, hoping you might stumble upon an elk, is not a strategy. Each morning you need to decide where you're going and why. That gets easier the more you hunt and learn terrain and elk behavior, but even beginners should have some sort of basic plan. As noted earlier, I recommend hiking up to open parks before first light and looking for elk feeding along the edges. Then, once the sun breaks over the hill, hunt the thick stuff where you have a chance to ambush a bull while it's bedded down.

My elk season actually begins weeks before the season opener. By that time, I've spent several days afield in elk country, narrowing my focus to the two or three hunting spots where I expect to see elk. On opening day I feel confident that I will see elk and bag a bull. No matter what happens, I keep that flame of confidence alive all season. It might take a few trips up the mountain, I say to myself, but I'll get my bull by sticking with whatever strategy I've worked out for that season.

Each night, before I set my alarm to get up at 4 or 5 a.m., I check weather conditions to determine which of the two or three routes I'll take to reach the hunting spot I think will offer my best chances.

Usually I try to reach feeding areas a half hour before legal shooting time (an hour before sunrise). Often I hike the same route before the season to clear deadfall and debris so I can quietly and quickly get to the park on schedule. A few hundred yards before I reach the spot where I expect elk to be feeding, I stop. I catch my breath, and, if it's cold, put on an additional layer of clothing. Most important, I concentrate on my hunt. I take a few deep breaths and remind myself to be patient, slow my pace, and think like an elk. If I were an elk, what would I be doing right now and where would I be?

I'd never been a patient person until I began elk hunting. And even during those

---

Craig Mathews, of West Yellowstone, is a world-renowned fly tier and co-founder, with Yvon Chouinard of Patagonia, of the 1% for the Planet Club.

first few years, I took a hasty run-and-gun approach. I still was able to kill bulls, but it was often by happenstance. Now patience is the key to my strategy.

One day in late November 1985, I ran into an old elk hunter in the forest. He stopped me and asked if I had seen any elk that day. From his rocky perch overlooking the area I hunted, he had watched my early morning route. Back then, I'd walk through security areas and frequently bump bedded elk, sending them running past his perch. I commented to the old hunter that I had "kicked up several in the black timber." He replied, "You have to slow down to a snail's pace, become patient, and by that you will make your own elk luck." I took his advice, and two days later I shot a nice bull. We became good friends after that. A few years back, I scattered his ashes at his perch.

Elk country is big country, and it's tempting to try to cover as much as possible each day. You never know what's over that next ridge, right? But you have to resist. Remember: a snail's pace. Once you get to a place you know has elk, slow down and walk a few paces, then stop for a few minutes, then walk a few more paces, and so on, watching and listening all the time. Whitetail hunters call it "still hunting," and it works great for elk in thick timber.

By moving slowly, I usually see elk before they see me, allowing me to get remarkably close. Of the 38 bulls I've killed, not one shot has been over 85 yards. I spotted bull number 14 snoozing in a jungle of thick timber. Scooting on my butt in the snow, I crept to within just five yards of where he lay before I took my shot. He never woke up.

Just as important as having a plan is knowing when to adjust it to changing conditions. I know hunters who develop a rigid plan for the day and stick with it no matter what. They start at point A, plan to have lunch at point B, hunt the afternoon along points C and D, then return to their truck when it gets dark. They'll stick to this route and schedule even if they find tracks, droppings, day beds, or other elk sign that would cause me to abandon my existing strategy and work up a new one based on the new information. One year, a friend actually walked away from elk sign in order to get to his traditional lunch spot by noon.

OTHER TIPS

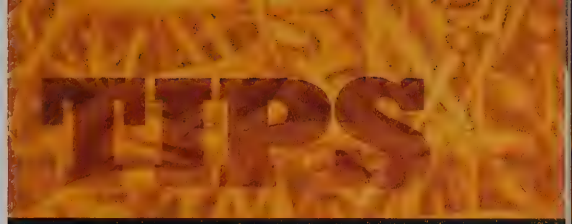
In addition to patience and confidence, the two other traits successful elk hunters have are perseverance and the ability to concentrate. I do not quit hunting until I take a bull. Sometimes that has required many days in the field. In 1981 I hunted 18 days before I even saw a bull. On that day, I took bull number 3 at the end of legal shooting time in a raging snowstorm. Since then, the longest it's taken me is 11 days on the mountain. During the past four seasons, on average I've bagged bulls during my first five days of hunting.

It might take a few trips up the mountain, but I'll get my bull by sticking with whatever strategy I've worked out for that season.

Use all your senses to notice everything around you. I located bulls numbers 9, 16, 25, and 31 by hearing pine (red) squirrels and gray jays barking at the bedded elk. I was able to sneak in on bulls numbers 4, 11, 22, and 38 when the wind brought their scent to me, before I saw them.

Of course, I'd be a liar if I didn't admit that sometimes luck plays a role in my success. Two years ago, I thought I saw the side of an elk that turned out to be a tree stump. Then, before I could move, I saw another stump that turned out to be a 5-point bull just 75 yards from where I stood. Finding a bull there wasn't part of my plan. But elk hunting is hard enough as it is. The few times when fortune smiles, I'd be a fool not to smile back.

PHOTOS COURTESY CRAIG MATHEWS



5 Essential Tips

I realize that most hunters don't work and live surrounded by some of the best elk hunting areas in the United States. I know I'm lucky to have the time and opportunity to scout beforehand and hunt several days during the season. If you don't have those luxuries, here are the five most important things you can do to increase your odds of harvesting a bull:

1 Learn from experienced hunters.

Talk to veteran hunters. Read *Bugle*, *Elk Hunting*, and other elk hunting magazines. Study elk hunting DVDs and Vimeo and YouTube videos.

2 Figure out where elk eat and hide.

Locate feeding and security areas and the elk trails to and from these sites.

3 Learn to read elk sign.

Learn to identify elk smell, elk tracks, fresh elk scrapes on trees, and the difference between bull and cow droppings.

4 Look for elk "portions."

I never see a whole elk in deep timber. Instead, I look for a moving antler, a twitching ear, a white butt, or a patch of brown elk hair.

5 Hunt, don't sit.

Spend every minute of your hunt time in the forest, not sitting in your truck looking through binoculars.

Good To Be Back

A quick trip to paradise in early September.

By Sam Jefferies

My dad calls me a lot, and it's not hard to understand why. After decades of living in suburban Seattle, he moved to the Tobacco Valley near Eureka in far northwestern Montana several years ago. Ever since, his life has been one outdoor adventure after another.

His stories should constitute harassment, trapped as I am in the urban confines of Washington, D.C., with too-clean shotguns and unscuffed boots reminding me that professional choices have personal consequences. As if I needed reminding.

Calls from the old man, whose nickname is "Chubbs," mean some story is bursting to be told: a beautiful strutting tom turkey he harvested with a bow, an enormous trout that shook his fly free just as it nosed toward the net, snuffling grizzly bears that forced recess to be canceled at the local elementary school, and on and on. Week after week I have to listen to his high-country exploits, usually as I'm choking on exhaust fumes and cursing our forefathers for building the nation's capital atop a godforsaken swamp.

Still, my frustration doesn't make me any less eager to hear from him and grin, despite myself, as he regales me with another wild tale of clambering down a steep-sided river valley to prospect for massive rainbows. Nor do his calls ever fail to give me itchy feet and a desperate need to return to my beloved West. Finally, last September, I did just that, cashing in carefully hoarded vacation days and flying with my wife to Kalispell.

One glance at Chubb's pickup was plenty to remind us how far we had traveled and how good it was to be in Montana. A battered canoe hung from the top of the truck, covered in dust and soot, a sign of the wildfires ravaging the state's beautiful northwestern region all summer. The thumping of tails gave away two retrievers in the truck bed, one wise and creaky jointed, the other youthful and reckless, both thrilled at the prospect of chasing game birds, heralded by the arrival of guests this time of year. A few broad smiles and back slaps later, we were heading north along U.S. Highway 93.

Eager to get cracking, my wife and I wasted no time. We shot our limit of ruffed grouse and caught enough panfish for several meals within our first few days in the valley. We were happy and refreshed, but hadn't nearly gotten our fill. Fortunately, Montana is a land that welcomes the restless and rewards the bold. Fresh September snow be damned, the three of us headed into the mountains with full packs and an equal blend of determination and foolishness.

One of the many amazing things about Montana is the vast abundance of beautiful places that are publicly available yet rarely visited. Without risking a family excommunication, I'll just say that the highway led us to a jumping-off point for a mountain hike to a U.S. Forest Service cabin.

Daylight was slipping away and we had a mountain to climb, but as I unloaded my pack from the truck I spotted a beautiful little stream below the road. Raised to never pass up good-looking trout water, I couldn't help but snatch my rod, reel, and fly box and stealthily make my way down to the bank. Being a rusty city slicker, of course my first cast tangled in the only bush along 100 feet of clear bank. But the next try found water, and as my fly drifted past a promising-looking boulder, a trout rose and grabbed it. My tippet straightened and line started to sing off the reel. It had been years since I'd landed a trout, but muscle memory kicked in and, after a brief tussle, I brought the fat cutthroat into the net. I snapped a quick picture before easing it back into the current. If they don't have fly-fishing and gullible cutthroat trout in heaven, I'll just head out West when my time comes.

My pack felt light as I loaded it onto my shoulders, heart still racing from my riverbank triumph. Now carrying my 20-gauge, I stomped my way along the mountain trail through two inches of new snow, the chilly mountain air cutting through my wool jacket.

"Psst!" Chubb called from down the trail, and I snuck up to him as he pointed out a beautiful dusky (blue) grouse perched on a branch 20 yards away. I took careful aim, fired—and missed! The grouse sailed, slowly and gently, down the mountain. Shaking his head in disbelief, my dad chuckled, clapped me on the shoulder, and urged me on, calling the dogs back from chasing the unharmed bird.

As I trudged along at the head of our group, a dog flanking me on each side, the young black Lab started to get birdy. As her head went down into a clump of brush, three spruce grouse burst from the vegetation. I swung and sent two loads of No. 6 shot after them, tumbling a bird with each shot. I couldn't believe it: a double on the mountainside—with a pack on my back! My reverie was instantly broken by Chubb's call to grab the older dog to prevent it from racing after the birds down the steep ridge. I tumbled toward the dog, grabbing its collar. The old dog and I then plopped down on the path and watched the younger Lab mark the grouse and bring each one back to where my dad stood waiting.

It was well below freezing that night, and the wind rattled the thin panes of our cabin windows. To think that only a day before I'd been stuck in traffic in downtown Washington, D.C., wearing a suit and late for a meeting. As I lay next to the cast-iron stove, burrowed deep in my sleeping bag, I couldn't help but shake my head and marvel at the riches I'd been lucky enough to touch that day.

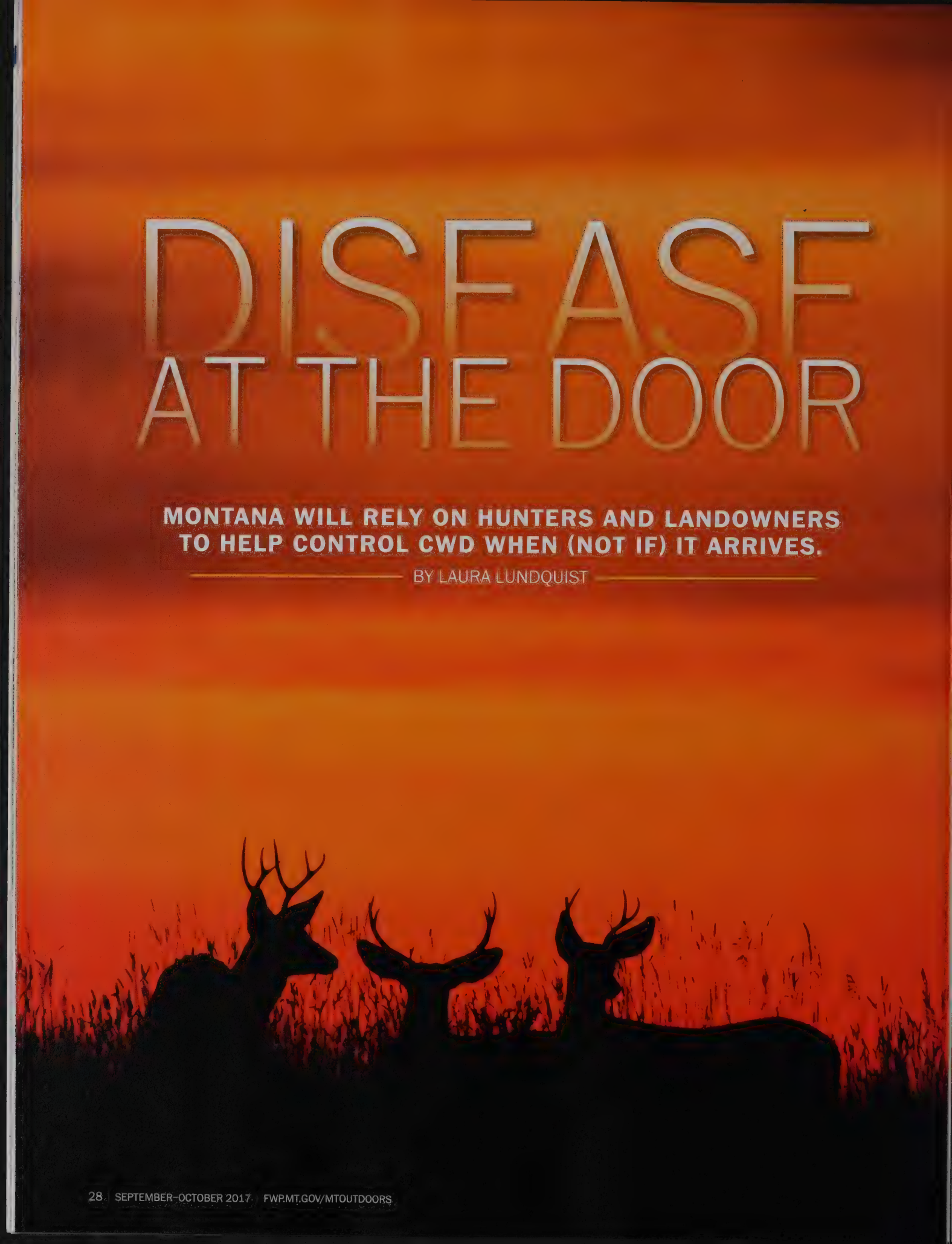
Originally from Washington State, Sam Jefferies is a "recovering" lobbyist now working as a freelance writer in Washington, D.C.

CABINET MOUNTAIN RANGE BY JOHN LAMBING

DISEASE AT THE DOOR

MONTANA WILL RELY ON HUNTERS AND LANDOWNERS TO HELP CONTROL CWD WHEN (NOT IF) IT ARRIVES.

BY LAURA LUNDQUIST



One day soon, Montana Fish, Wildlife & Parks veterinarian Jennifer Ramsey will receive the email she's long dreaded: Colorado State University technicians will have found chronic wasting disease in one or more of the deer tissue samples she sent them. That message will change the future, both for FWP and the state's deer and elk hunters.

In early May of this year, Ramsey thought that day had come. A woman called about a deer in her yard that was acting oddly. Her children had freed the deer from a fence, but then it just stood there, dazed and drooling, head down, emaciated—all symptoms of a deer suffering from chronic wasting disease (CWD).

After the deer was euthanized, Ramsey removed two lymph nodes from its neck and sent them to Colorado. Then she waited. "It was a pretty stressful couple of weeks. When I got the email, I swear I opened it like this," Ramsey says, covering her eyes with her hand and slowly peering through two fingers.

It turned out the deer was just old. But when CWD settles in Montana, many deer and elk will start dying well before their time. And, if nothing is done, Montana could eventually see large-scale die-offs like those in Colorado's and Wyoming's infected mule deer herds. "I don't think any of us will be surprised when we get a positive result," Ramsey says. "How could it be everywhere around us and not here?"

DEADLY BRAIN DISEASE

The origins of CWD are unknown. It was first reported in the United States in 1967, when researcher Beth Williams saw telltale symptoms in captive mule deer that eventually died at a Colorado Division of Wildlife facility. She recognized the probable cause because she'd already seen the disease in captive deer in her previous job at the Toronto Zoo. After that, researchers were dismayed to find the disease popping up in other captive herds across North America and then, even more alarming, in wild populations.

Like mad-cow disease and scrapie in sheep, CWD kills by causing proteins in the brain and nervous system to malfunction. Like some cancers, it takes a while—one and a half to two years—before CWD progresses to where symptoms appear and the afflicted animal dies. Lacking easy and noninvasive tests to find it in live animals, scientists have a hard time detecting the disease until it becomes widespread.

CWD is caused by a deformed protein called a prion that, once it invades deer or elk, changes normal, working prions into abnormal, malfunctioning ones. Because CWD is not caused by a bacteria or virus, antibiotics and other conventional medicines don't work, frustrating wildlife biologists who have tried to stop its relentless spread.

WASTING AWAY Chronic wasting disease is named for its symptoms, which include emaciation, as seen in this infected game farm elk.

Abnormal prions invade a healthy animal through contact with an infected animal's saliva, urine, feces, or decaying carcass. Because elk and deer are social animals that congregate, the disease moves within and among herds. The odds of transmission are especially high when animals are packed into wildlife farms or feed grounds—such as the 8,000 to 10,000 elk that gather in the National Elk Refuge in Jackson Hole, Wyoming, to eat hay and cattle pellets provided by the refuge. The disease is always fatal.

Killing CWD-infected deer and elk does not solve the problem. Prions can persist in the environment for at least two years, waiting for the next curious deer to come along.

In the West, mule deer, especially bucks, seem most susceptible to CWD, followed by white-tailed deer. Elk and moose are affected to a lesser degree.

So far, CWD has turned up in wild herds in two Canadian provinces and 21 states, most recently Arkansas in 2015. Four states have found it only in captive populations, including Montana in 1998 when elk on a Philipsburg game farm tested positive.

LEFT TO RIGHT: JOHN LAMBING; WYOMING GAME AND FISH DEPARTMENT

“I don’t think any of us will be surprised when we get a positive result. How could it be everywhere around us and not here?”

WAITING FOR THE NEWS FWP veterinarian Jennifer Ramsey at the agency’s wildlife pathology laboratory in Bozeman. When CWD arrives in Montana, she’ll be the first to know about it.

The Philipsburg operation was shut down, but it scared enough people for FWP to start a CWD surveillance program. Testing began in 2000 thanks to federal funding, and 1,500 to 2,000 animals, mostly harvested by hunters, were sampled each year. After 2012, however, federal funding dried up. Until recently, FWP has lacked funds to continue monitoring, which concerns Ramsey. "Without annual surveillance, we don't know what's going on out there," she says.

NEARLY SURROUNDED

Over the past decade, CWD has nearly surrounded Montana (see map below).

Laura Lundquist is a journalist in Missoula.

Infected animals live just over the border on three sides of the state in Wyoming, the Dakotas, Saskatchewan, and Alberta. In 2016, a deer tested positive north of Cody, Wyoming, just eight miles from the Montana border. "The odds are good it's already here. We just haven't discovered it yet," says John Vore, FWP Game Management Bureau chief.

Though CWD could arrive from any neighboring state or province, Wyoming is the most likely source. Once scientists there learned that CWD wasn't a proven health threat to humans, Wyoming stopped managing for the disease. Since then, infection rates in mule deer have climbed higher than 30 percent in some districts. As a result, the size of some infected herds has declined by up to 20 percent each year. Last year, the Wyoming Game and Fish Commission voted to renew efforts to limit CWD.

Unfortunately, once CWD infects most of a herd, there's little state wildlife agencies can do. They can't eradicate the disease because, by that time, it has pervaded the environment. Large-scale culling doesn't work either, because it's nearly impossible to kill all the deer or elk in a large area—not to mention that people don't like seeing entire herds wiped out.

Despite these challenges, states that tackle the problem early and approve special hunts that keep the infection at less than 5 percent of a population might keep the threat under control, says Colorado Parks & Wildlife veterinarian Michael

▶ Chronic Wasting Disease in North America

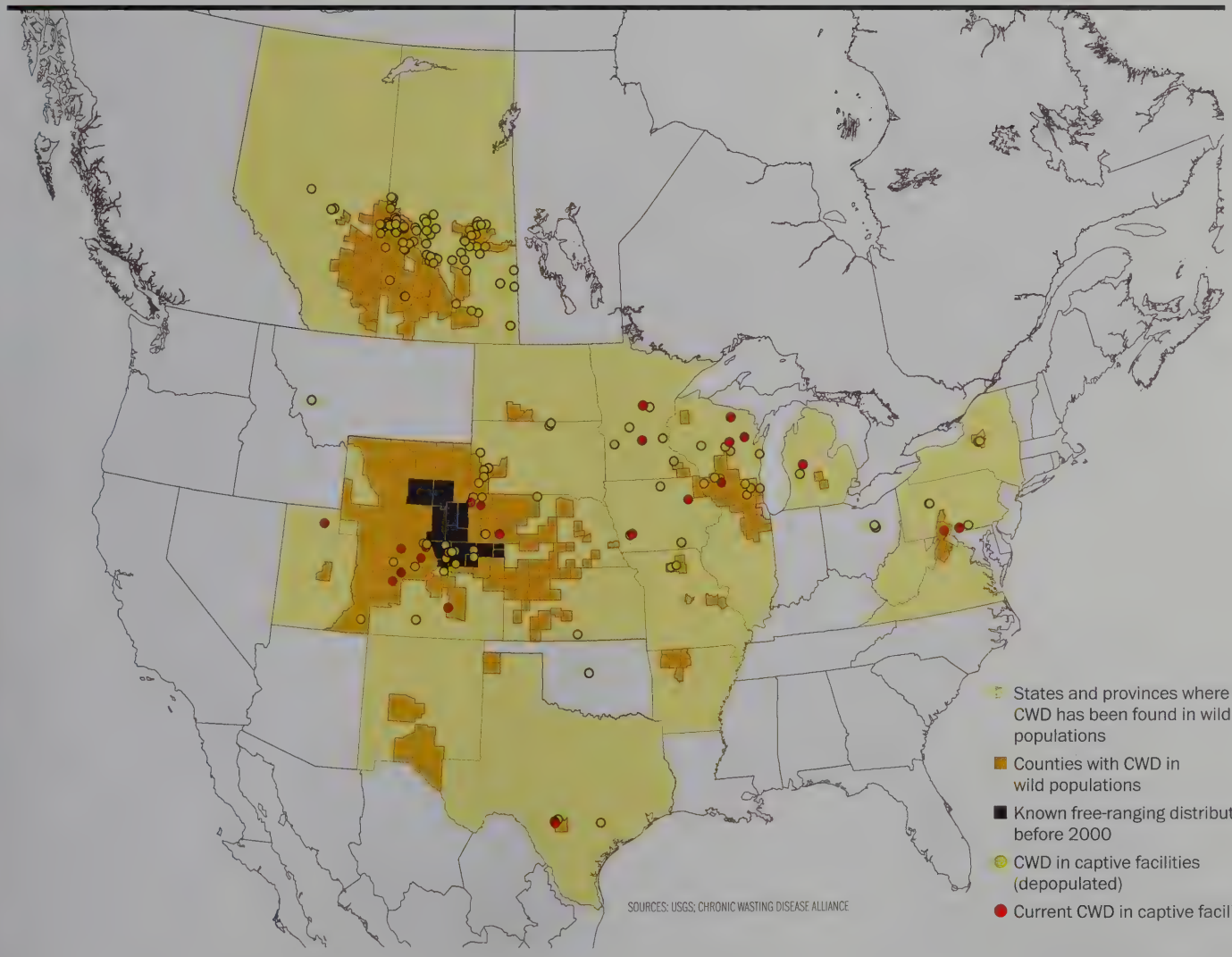

States and provinces where CWD has been found in wild populations
Counties with CWD in wild populations
Known free-ranging distribution before 2000
CWD in captive facilities (depopulated)
Current CWD in captive facilities
SOURCES: USGS; CHRONIC WASTING DISEASE ALLIANCE

PHOTO: THOMAS LEE

“Instead of attempting eradication, which is nearly impossible, our goal will be to keep prevalence low and prevent the disease from spreading.”

FALSE ALARM Ramsey removes tissue from a mule deer suspected of CWD infection. Though the results came back negative, she says it's only a matter of time before a deer or elk shows up in Montana carrying the deadly disease.

Miller, who has studied CWD for the past 20 years. "Wildlife managers need to be engaged somewhere between the knee-jerk crisis response and just sitting back and seeing what happens," Miller says. "CWD is just another way for animals to die. If it's a rare way for them to die, then it's probably sustainable. But if it starts to become a common source of mortality, well, then you've got problems."

Ramsey says that once CWD gets into a deer or elk population, there's no feasible way to eradicate it. "Instead, our goal will be to keep prevalence low and prevent it from spreading," she says.

DEER TISSUE NEEDED

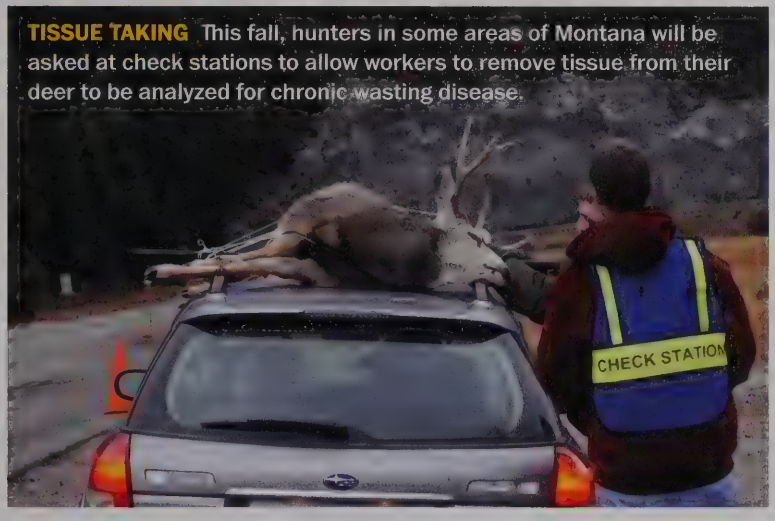
Vore says FWP is renewing surveillance this hunting season. Biologists will sample mule deer in southwestern and south-central Montana and then focus on eastern, central, and western Montana in 2018. Workers at hunter check stations will request tissue samples that will be sent in for testing. "We'll also work with game processors and taxidermists to obtain samples from targeted areas," Vore says.

In addition, FWP wildlife disease ecologist Emily Almberg will test deer near the defunct Philipsburg elk farm. "Because it's a slow-growing disease, it's unlikely that we would have found a positive wild animal in that area back in the late 1990s. But now...?" Almberg says, shrugging. "I'm mentally preparing myself to find it at a higher prevalence there and in other areas than we would like, because we've done almost no surveillance over the past four years."

FWP is working with a citizens' advisory panel to determine an initial response once the disease is found in Montana deer or elk. The department would likely institute a special CWD hunt in which hunters would harvest 300 to 500 animals within at least a 10-mile radius of the first CWD-positive animal. That's the harvest size Almberg says is necessary for her to understand what percentage of animals are infected and how far across an area the disease has spread. "The point of the special hunt wouldn't be to try to eradicate the disease, but to determine its prevalence and geographical range," she says.

Any special CWD hunt would take place during or near the general five-week season, Vore says. FWP would likely issue special restricted licenses to prevent hunters from flooding the area.

To keep prions from spreading, hunters wouldn't be able to leave a special hunt area with a whole carcass, just as they can't legally bring carcasses into Montana from states or provinces where CWD exists. Instead, they'd have to use game processors or taxidermists in those areas. Because a CWD test takes a few weeks, hunters won't know right away if their animal is infected.



TISSUE TAKING This fall, hunters in some areas of Montana will be asked at check stations to allow workers to remove tissue from their deer to be analyzed for chronic wasting disease.

If a deer or elk does have CWD, it's up to the hunter to decide whether to eat the venison. It won't be an easy decision. The Centers for Disease Control states that "no strong evidence of CWD transmission to humans has been reported." At the same time, the federal agency recommends not eating the meat of infected animals.

If, after a special CWD hunt, Almberg finds low prevalence of the disease, FWP would likely maintain the existing general hunting season in that area. If more than 5 percent of harvested animals have the disease, the department may modify the general season to reduce prevalence. That would likely require targeting older bucks, which have a higher infection rate.

Will increasing buck harvest be a hard sell to hunters, especially if it's required in hunting districts managed for trophy deer? Chad Klinkenborg thinks not. The Montana director of the Mule Deer Foundation and a member of the CWD advisory panel suspects that hunters wouldn't put up much resistance, especially if they understood the consequences. "I think most will have the attitude of, 'Let's do whatever is necessary to contain this, because we want to protect the mule deer population at large,'" Klinkenborg says.

Tom Toman of the Rocky Mountain Elk Foundation says his organization is committed to helping Montana respond to outbreaks and manage for the disease. "We continue to promote sound science and fund research to help contain CWD," he says.

ALL HANDS ON DECK

Landowner cooperation also will be critical. During a CWD hunt, hunters will need to spread out across the response area to harvest enough animals for scientific study. If some landowners are unwilling to allow public hunting, then CWD surveillance and disease control will be severely hampered. Vore hopes all landowners will see the value in keeping the disease contained.

Perhaps the biggest challenge in managing CWD will be to sustain public interest and cooperation. "It's not like blue tongue [disease], where you have a bunch of dead deer lying around," says Ramsey. "CWD takes 20 years to start to affect a deer or elk population." Both Colorado and Wyoming have struggled to keep hunters, landowners, and others engaged over the long haul. Those states warn that when vigilance with the slow-moving disease wanes, more deer and elk start to die. "They're advising us to predict a lot of hoopla when we find CWD," says Vore. "But then people may lose interest and stop working with us because they won't see any changes to populations. But, unfortunately, their grandkids will."

LEFT TO RIGHT: LAURA LUNDQUIST; LINDA THOMPSON

WHERE

To Hunt Elk in Montana

By Jack Ballard

An insider's guide for new hunters and nonresidents to locating the best spots this season

Most elk hunters know exactly where they'll hunt this fall. Good for them. There's nothing better than having a place where you know you'll find elk.

But a growing number of hunters, resident and nonresident, don't know where to go. You might be among them.

Maybe your aging knees and heart require easier terrain than in the past. It could be you've just started hunting elk and don't have friends and relatives to guide you to a good spot. Perhaps elk no longer use the timber you've hunted for years and instead are roaming irrigated private land off-limits to public hunting. Or maybe you're a nonresident hunter coming here for the first time.

For those trying to figure out where to start hunting elk this fall, I can't tell you *exactly* where to hunt. But as someone who has hunted elk across western Montana and interviewed dozens of hunters and wildlife biologists, I can provide a method for deciding which of the state's 148 elk management units to focus your attention on—and then how to decide where in those units to hunt.

For additional help, I consulted two elk hunting experts. Randy Newberg, a Bozeman resident and host of two popular TV shows, *Fresh Tracks* and *On Your Own Adventures*, moved to Montana from Minnesota in 1991. Though he was a competent deer hunter, Newberg says he "made every rookie mistake in the book" in six years of trial-and-error hunting before killing his first elk. He still recalls what it was like to be a novice at the game, searching for prime elk hunting spots.

Thomas Baumeister, Montana Fish, Wildlife & Parks Conservation Education Bureau chief, has killed two dozen elk across western Montana. He says hunters hoping to find a place to hunt and harvest an elk have to do their homework. "I can't overemphasize the role of research," Baumeister says.

But research on what part of Montana? Our state contains millions of acres of elk habitat on thousands of square miles of public land. How does anyone even begin choosing from all that real estate to locate a hunting spot?

Two words: national forests.

STAY CLOSE TO HOME

Most elk on public land live in national forests. West of a line from Billings to Glacier National Park, every national forest in Montana holds elk. So which do you choose?

Consider how much time you have to hunt. I believe that anyone hoping for a reasonable chance of killing an elk needs at least five full days of hunting (excluding travel). If you live in Montana, focus on a national forest as close to home as possible. That way you can spend more time in the woods and less on the road.

If you're driving here from another state, keep in mind the scale of Big Sky Country. For instance, elk hunting destinations in southwestern Montana are a full day's drive from those in the northwest. Time spent behind the wheel to reach a mountain range on the far side of the state is better spent hunting. If you're driving here from the West

Jack Ballard of Red Lodge has written hundreds of articles on elk hunting and is the author of Elk Hunting Montana: Finding Success on the Best Public Lands, *the second edition of which is scheduled for publication in 2018.*

ED COYLE

PEACE AND QUIET After picking a national forest as close to home as possible—to reduce driving time—examine the map for routes closed to motorized vehicles. That's where the elk are.

Coast, consider hunting closer to the Idaho border. If you're coming from the Midwest, consider national forests in Montana east of the Continental Divide.

Once you've picked a forest, take stock of your expectations. It might seem, based on magazine covers, that everyone in Montana kills a big bull. Not true. Most harvested elk are calves and cows, and most hunters are happy to take any elk, including those without antlers. "A cow starts to look really good on day three of the hunt," Baumeister says.

Still, some hunters will be satisfied with nothing less than a 6x6 bull. They should know that each year only one in five elk hunters kills any elk—calf, cow, or bull—and only one in 25 bags a 6x6 or bigger bull. Because those figures include experienced hunters who take an elk nearly every year, the success rate of newbies is even lower.

After setting your expectations for public land hunting, it's time to choose areas within the national forest. Baumeister offers a simple starting place: FWP elk hunting districts that allow either-sex (antlerless and antlered elk) hunting. "That's a good indication of plenty of elk and decent access," he says. "Districts with multiple restrictions usually mean difficulties in terms of access or other issues." Find either-sex districts in the most recent issue of the FWP elk hunting regulations.

Set your expectations: Only one in five elk hunters kills any elk—calf, cow, or bull—and only one in 25 kills a 6x6 or bigger bull.

Newberg advises hunters to also identify potential hunting areas by analyzing harvest data from the Hunt Planner on the FWP website (fwp.mt.gov). Click the "Hunting" tab and then click on "Hunt Planner" under the "Plan Your Hunt" heading. After launching "Hunt Planner Map," click "Harvest Opportunities 2017 Season," then "Elk General Season," then "Elk General License."

"Look for hunting districts with high success rates, ideally ones next to each other," Newberg says. Figure success rates by dividing the total harvest by the number of hunters and multiply by 100. For example, a total harvest of 156 elk divided by 896 hunters multiplied by 100 equals a 17.4 percent success rate. Hunters focused only on bulls can figure out antlered elk harvest success rates the same way.

Harvest rates vary considerably from year to year depending primarily on weather (deep snow pushes elk to lower elevations, where they are more accessible to more hunters). Analyzing the three or four most recent years of data provides the most accurate picture.

What are "good" harvest numbers? I'd say any district with a 20 percent or higher overall hunter-success rate has good potential for either-sex hunting. Units with a 10 percent or higher success rate on antlered elk are worthy of a bull hunter's effort.

Once you've selected a few hunting districts, start looking at detailed maps to determine access. "Places with multiple access points are an advantage for both hunting and game retrieval," Baumeister says. Those areas may be crowded, though. Lots of access often means lots of hunters.

Those planning to stay in a motel need to figure out how long it will take to reach the hunting grounds. Estimate 30 miles per hour on most county roads and 5 miles per hour on U.S. Forest Service roads. Hunters camping in a topper or travel trailer will want to park near a county road. Tent-based hunters with a suitable back-road rig have the flexibility to camp close to a trailhead or other access point.

ASSESS YOUR TRAVEL ASSETS

Once you've identified potential hunting spots in a few hunting districts, assess your physical fitness and ability to travel back roads.

There's no getting around the fact that you

LEFT TO RIGHT: DONALD M. JONES; JOHN CARLSON

One year only $12. **Subscribe today!**

YES! I'd like a year (six issues) of *Montana Outdoors* for just $12.

My/Donor Information: (Required for gift subscription)

Name

Address

City State Zip

Select: 1 Year *6/$12* 2 Years *12/$20* 3 Years *18/$27*

Send a Gift to: (Please print)

Name

Address

City State Zip

Select: 1 Year *6/$12* 2 Years *12/$20* 3 Years *18/$27*

Best Deal!

Payment enclosed Bill me later

Add $3 per year for Canadian subscriptions.
All other foreign subscriptions are $48/year, paid in advance.

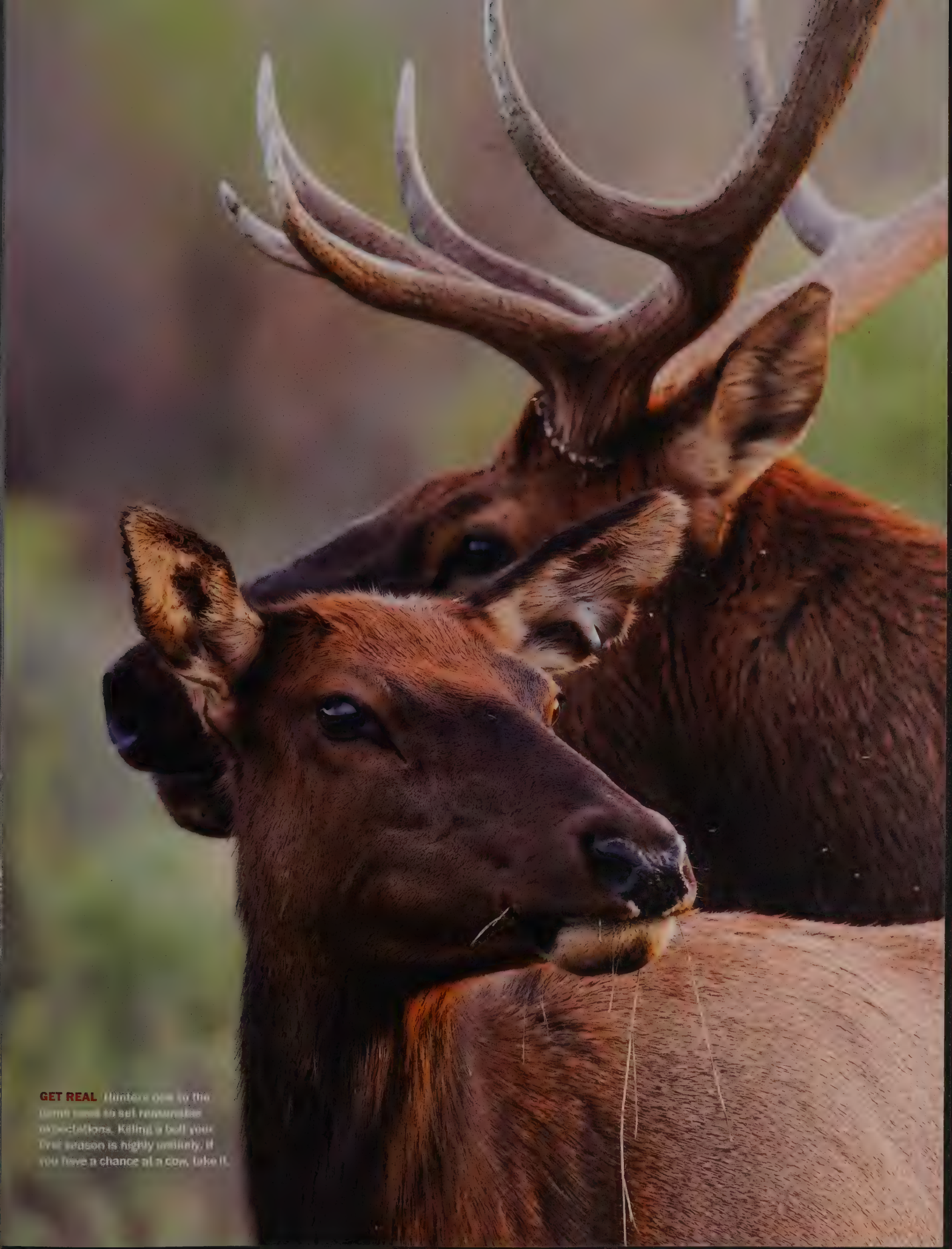
For faster service, subscribe by phone: **(800) 678-6668**
Or subscribe on-line: **fwp.mt.gov/mtoutdoors**

U17B

Place
Stamp
Here

MONTANA OUTDOORS
MONTANA FISH WILDLIFE & PARKS
930 W CUSTER AVE
PO BOX 200701
HELENA MT 59620-0701

Don't miss
the photo issue.
SUBSCRIBE TODAY!



GET REAL Hunters new to the game need to set reasonable expectations. Killing a bull your first season is highly unlikely. If you have a chance at a cow, take it.

Two (fictitious) Washington hunters come to Montana...

Kyle" is a 34-year-old hunter from Pasco, in southern Washington. He and a buddy, "Shawn," have purchased Montana nonresident elk combination licenses. Both have hunted deer since they were teenagers, and both see themselves as reasonably fit (though not as fit as they were 10 years ago). Shawn has a midsize 4x4 pickup with a pop-up camper and is comfortable driving rough mountain roads. The camper will provide sleeping quarters for the Montana hunt and allow them to easily move camp if necessary.

They both want to kill a bull elk, but have chosen a hunting area that provides a backup plan for a cow. Because the pickup will also be transportation to and from Washington, they agree on a roughly 500-mile maximum distance (about eight hours) from home. Each can take a week off from work. They plan to make a marathon overnight drive on Friday after quitting time to arrive for Montana's opening day. They'll hunt for bulls until Wednesday, then look for cows during the next three days.

Examining elk hunting districts in western Montana's Bitterroot Mountains via the FWP Hunt Planner, Kyle and Shawn find many areas open to bull hunting. But they are discouraged by fairly low hunter success rates, especially for nonresidents, and few opportunities to harvest a cow. They turn their attention farther south, where they notice that HD329 is open to antlerless harvest during the regular season. Next door, HD332 offers "brow-tined bulls only" with a general license (no permit required) and shows decent hunter-success rates.

Research with various online mapping resources shows the distance from Pasco to the hamlet of Jackson, Montana (close to both hunt areas), at 470 miles. So far, so good. They home in on the southern Pioneer Mountains west of Wise River Road (HD332), a major artery into the mountains. The terrain doesn't look too steep, elevations are reasonable, and lots of hunting country sits between 7,000 and 8,000 feet. They note numerous trails and seasonally closed roads in the area, along with a few campgrounds. Bingo. The southern end of the Pioneers it is.

They devise a scouting trip over Labor Day weekend to check out the area and take a quick look at the country south of Jackson (HD329), where they can also hunt for cows. A reasonable plan in place, the duo agree to monitor events that might change their plans (such as forest fires) and scout the area more thoroughly before Labor Day via Google maps.

And that's how you plan your first Montana elk hunting trip. ■

have to hike, often for hours, up hilly and often steep terrain if you hope to kill an elk. "You don't need to be a gym rat," Newberg says. "But you need to be fit. Just adapting to exercise at high elevation can be tough."

Hiking in snow and carrying a pack are normal parts of elk hunting. Because elk generally stay at least a mile or two from roads—and road hunters—the farther you can get from traffic, the more likely it is that you'll see animals. That means hiking at least four miles per day carrying a rifle and daypack. And remember, downing an elk two miles from a road can mean several trips hauling 60 to 85 pounds of meat the same distance, a task even tougher than the hiking itself.

Elevation is another consideration. Even Montanans and others accustomed to mountain hikes start sucking air above about 8,000 feet. For hunters from the Midwest and other low-lying areas, hunting at even 4,000 feet requires extra exertion. That's yet another reason why training is essential. Some advance hiking at the elevation you plan to hunt will allow you to hunt longer and farther.

Elk aren't always up in the stratosphere. Herds found at 10,000 feet in September and October may be down to 5,000 feet or lower in November. That's a mixed blessing. Severe winter weather is what pushes elk down from the high country, so you'll have to hike through snow even if you don't need to trudge as far uphill.

By returning to the same area year after year, you gain invaluable knowledge of the landscape and elk behavior that ups your odds of success.

Slope, or steepness, also influences hunter mobility. For most hunters, a 10-degree slope (gaining 900 feet in elevation per mile) feels like a significant climb. Going up or down a 20-degree slope (an 1,800-foot elevation gain per mile) for more than a mile can be brutal even for fit hunters. Estimate slope by analyzing contour lines on a topographical map against the scale of miles. Some mapping software calculates elevation gain against mileage for a user-chosen route.

I recommend that moderately fit hunters stick to elk habitat at 8,000 feet or lower and with an average slope of less than 10 degrees. Trying to go higher or steeper means you'll spend most of your day huffing and puffing instead of hunting.

In Montana elk country, what you drive matters. Sure, ultimately it's your two legs that provide the most essential transporta-

LEFT TO RIGHT: RICK CLARK; DARLENE TROUTWINE

tion, but you still need a rig that can take you to the trailhead. Four-wheel drive is essential. On most unpaved county roads you can get by with fairly low clearance, but venturing onto national forest roads often requires a high-clearance backcountry rig.

For example, the "road" to my family's elk camp in the Snowcrest Mountains is just a few miles long. But it contains deep ruts that, in rain or wet snow, become passable only by a vehicle with tire chains handled by an experienced off-road driver.

In most cases, a rental sedan or weekday commuter car won't take you far enough up mountain roads to get within reasonable hiking distance of where elk live.

To figure out terrain characteristics in the hunting district(s) you plan to hunt, return to the FWP Hunt Planner. (The following instructions may seem complicated on paper, but they make sense once you get into the program.) After launching the "Hunt Planner Map," use "Map Tools" to examine a topographical map to assess terrain near roads in terms of slope and available trails. Use various "Base-maps" to look at hunting district boundaries ("Ownership Hybrid—MT") and terrain features ("USA Topo" or "Ownership Topo—MT"). The "Draw Tool" under "Map Tools" allows freehand drawing on the topo maps and calculates distance. Distance and elevation gain (calculated from contour lines) give a quick estimate of slope. Along with topography, the "USA Topo" basemap identifies trails.

Another tip, Newberg says, is to look at a Forest Service map of the area you plan to hunt and draw a corridor two miles on either side of any road that allows motorized vehicles. "You want to hunt outside of those corridors, because elk don't want to be anywhere near motorized vehicles or even the sound of four-wheelers," he says.

FOUND IT Bowhunters field-dress a bull in September. Finding a place to bag an elk is easy. Pick a nearby national forest, look for hunting districts with either-sex hunting and good success rates, identify roads closed to vehicles, then get out there and start hunting.

5 Steps to Finding an Elk Hunting Spot

- Locate a **national forest** closest to where you live or are driving from.
- Use the FWP Hunt Planner to find hunting districts in that NF with **either-sex hunting** and **high hunter-success rates**.
- Assess your **physical fitness, hunting rig, and accommodation** options.
- Use the Hunt Planner to **find trails** near roads and **assess terrain steepness**.
- Stick with it. **Return to the same area year after year** to increase your knowledge and success.

WARM OR CLOSE?

An essential consideration for any elk hunt is where to sleep. During my 35-plus years hunting elk, I've stayed in motels, RVs, tents (wall and backpack), and even the cargo area of an SUV. All have their pros and cons. If your goal is to maximize hunting time, I'd advise camping, and doing it as close as possible to where you plan to start hunting each morning.

Yes, it's nice to sleep in a warm bed and eat in a café, but think twice about hunting from a motel. Let's say the closest one to your hunting area is 20 miles away via a county road and another two miles on a Forest Service route. That's an hour of driving each way, which means having to wake up an hour earlier than if you camped and getting back an hour later. Or it means spending two extra hours driving when you could be hunting.

As one final piece of advice, Newberg highly recommends first-time elk hunters arrive "at least two days before hunting to acclimatize and adjust plans if necessary." He also reminds all hunters of a proven aspect of elk hunting: By returning to the same area year after year, you gain invaluable knowledge of the landscape and elk behavior that ups your odds of success.

In many states, the challenge of finding a place to hunt elk comes from too little habitat or too many access restrictions. In Montana, it's just the opposite. There's almost too much elk country for a newcomer to take in. "We have something here with our public lands that is unique to the entire world," Baumeister says. "The scope of public elk hunting in Montana can be daunting. But be delighted you have such a challenge."

When everything changes

by Bruce Auchly

At the start of the fourth week of September, days in Montana start to become shorter than nights. Elk and antelope breeding seasons peak. Aspen leaves hang golden before the fall.

During the fourth week of September, moose approach the apex of their rut. Bull trout spawn in coldwater tributaries. Asters still bloom where many other prairie wildflowers have long since faded. Ground squirrels and marmots have already begun their long winter naps.

It's the autumnal equinox, the start of fall. Some cultures equate the transition with oncoming winter and even death. But for hunters, anglers, hikers, and floaters, the fourth week of September is a time to anticipate and delight in.

And it's all due to daylight length. Scientists call it "photoperiod."

Because Earth tilts slightly on its axis, our planet's annual dash around the sun means daylight is longer than darkness north of the equator from late March to late September.

The seasonal shift touches everything on Earth, from behavior to temperature, climate to reproduction, birth through death. Every schoolchild has to be taught this. Every plant and animal inherently knows it.

There are short-day plants and long-day plants. No one knows why asters evolved to bloom in September and pasqueflowers in April. It works, and that's all that has to happen.

In the fourth week of September, at Montana's latitude, leaf color presents the most visible effect of changing day length. Decreased daylight triggers plants to stop producing chlorophyll, the chemical agent that turns leaves green and masks other colors.

When the green disappears, yellows and reds reappear. Temperature and precipitation come into play, but day length is the driving force. Leaves change color even during unseasonably warm Septembers and Octobers.

In the animal kingdom, birds provide dramatic examples of the effects of photoperiodism. Back in early spring, birds responded to lengthening daylight by putting on a layer of fat to use when migrating and breeding. That happens again in August in response to decreasing daylight, except the energy stores are used only for migration, not reproduction.

When sufficiently plump, birds in the northern hemisphere fly south, turning their spring navigational maps upside down. Young birds that hatched just a few months earlier have to pull this off even though they have never been to their wintering ground or experienced migration.

For Montana's mammals, the fourth week of September represents a mixed bag. Some reach a peak of behavior, like rutting elk and antelope. Others, like male deer, haven't even begun their rut.

Bears have their own fall behavior. Triggered by decreasing daylight, they enter a stage known as hyperphagia, where they eat for 20 hours a day or more—gorging themselves on up to 20,000 calories a day—as they beef up for winter hibernation.

Even underwater, daylight length reigns supreme. Photoperiod affects fish behavior and movement, usually in combination with water temperature and flow.

All these animals have a built-in biological clock. So do humans, though most people don't pay it much heed. Alarm clocks, calendars, and the bright glow of TVs, smartphones, and computer screens mask nature's timetable.

The exceptions are those of us who spend time outdoors. Like wildlife, we pay close attention to the length of daylight and darkness. When the autumnal equinox arrives, our internal alarm clock starts ringing, because we know that the next few months will be the best time of year to be outside.

Bruce Auchly manages the FWP Regional Information and Education Program in Great Falls. Ed Jenne is a Missoula illustrator.

ILLUSTRATION BY E.R. JENNE

American mink

Neovison vison **By Dennis C. Joyes**

When I was a boy, a friend decided to go into the trapping business. Muskrat pelts were selling for $3 apiece, and he was convinced there was a fortune to be made. Not much came of his venture. But I do remember that his first catch was not a muskrat but a dark brown weasel-like animal our parents later identified as a mink. We had never seen such an animal up close and were intrigued by its graceful shape, partially webbed feet, and luxurious, chocolate-brown fur. Many years later, I remain fascinated by this small, sleek predator, which I see once in a while loping along the bank of a stream or river.

Appearance

Mink belong to the weasel, or mustelid, family. Like weasels, they have a long, slim body, but are stouter and weigh two to three times as much as most weasels. Adult male mink are about two feet long, including the seven-inch tail, and weigh roughly two pounds. Females weigh half that and are about 18 inches long. A mink's ears are short and barely visible. Its feet are fully furred, with toes webbed near the base. Unlike weasels, mink do not change color with the seasons, remaining dark brown, with a white patch on the chin and parts of the throat, year round. The soft fur, with its dense underlayer and glistening guard hairs, has long been valued for coats, stoles, and jacket trim.

Range

Mink live throughout Montana and across the United States and Canada except in the Arctic and the desert Southwest.

Habitat

Mink love water. They live in wetlands and along the shores of lakes, rivers, and streams. They hunt in shallows and den in abandoned muskrat dens along banks, beneath piles of brush or driftwood, and in hollow logs. In Montana, mink are found from the mountainous forests along the Idaho border to the state's eastern prairies and even semi-desert, as long as water is nearby.

Food and Hunting

Mink are strictly meat eaters that hunt alone and mainly at night. A mink has a home range of roughly three square miles, though biologists have tracked some radio-collared individuals as far as seven miles in a single night. Strong swimmers, mink cruise below the water surface hunting fish, frogs, and crayfish. Mink also hunt muskrats, mice, and voles. In prairie wetlands, ducks make up a large share of a mink's diet. The small predator will eat the eggs and kill ducklings and even an adult hen on its nest.

Reproduction

Mink usually mate in March. Females often mate with a second male about a week after the first mating, producing a single litter with offspring from both males. Baby mink are usually born after about 40 days gestation in April or early May. If a female mates early, in February, she may delay embryonic development for up to a month so that the young are born later in spring when prey is more abundant. The three to five kits are born blind and covered with a coat of silvery white hair. They are weaned at five weeks and begin to hunt on their own within two to three months. By the following February, mink are sexually mature. Mink can live for eight years in captivity, but only one to three years, on average, in the wild. Owls, hawks, foxes, coyotes, and large snakes prey on mink, especially the young.

Conservation Status

Because mink hunt mainly at night or at dawn and dusk, people rarely see them in the wild. Yet mink are abundant throughout their range. Though mink are still legally trapped during the winter, commercial mink farms produce most pelts, mainly sold in Europe and Asia.

Scientific name

Vison is an Icelandic or Swedish word for "marten" or "weasel." *Neo* means "new" or "revived form." The common name, mink, may come from the Swedish word for the species, *maenk*.

Writer Dennis C. Joyes lives in Ontario and frequently visits his home state of Montana.

DANNY J. BROWN

Montana State Library
3 0864 1007 0163 3

PARTING SHOT

HANDLING WITH CARE A student inspects a practice rifle during a Hunter Ed class in Helena. Since 1957 and 1987, respectively, volunteer Hunter Education and Bowhunter Education instructors have taught safety, ethics, and more. Learn why on page 16. Photo by Thom Bridge.

Montana Fish, Wildlife & Parks

On-line: **fwp.mt.gov/mtoutdoors**
Subscriptions: **800-678-6668**

Find us on Facebook Montana Outdoors Magazine

MONTANA OUTDOORS $3.50
0 74470 88810 9